

Puget Sound HOV Lane Performance

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Introduction

- TRAC performs an ongoing evaluation of HOV lane (and general purpose freeway lane) performance for WSDOT and the region
- Based on:
 - Car occupancy measurements
 - Transit ridership counts
 - Freeway surveillance data

Introduction

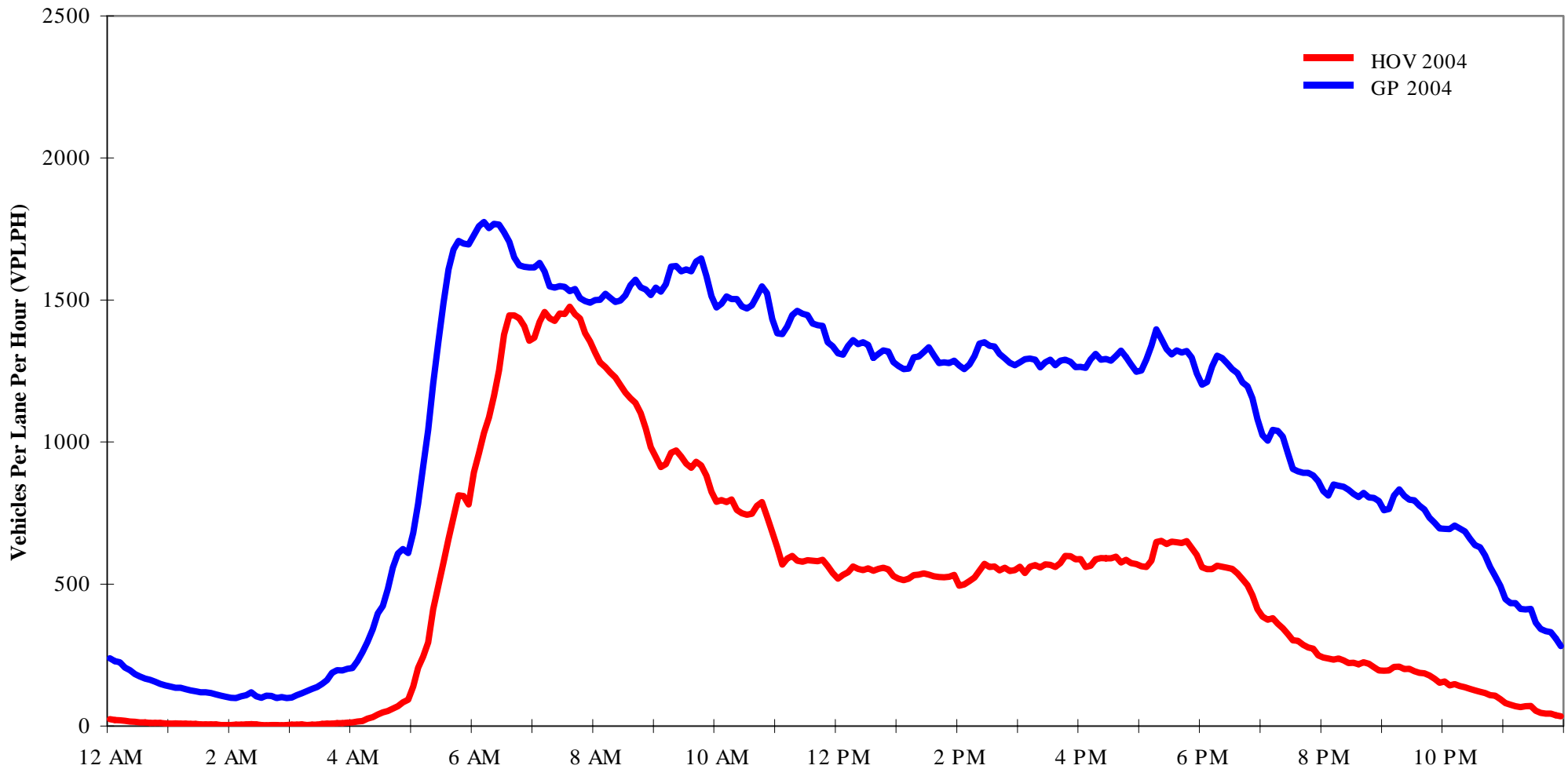
- The basic need is to monitor facility use and performance over time:
 - Vehicle use
 - Person use
 - Speeds (travel time)
 - Reliability (frequency of congestion)
 - Public attitude
- The data also allow special studies
 - Effects of hours of operation changes
 - Availability of capacity for HOT lane conversions

HOV Facility Performance Summary

- Northern I-5
 - High vehicle and person volumes in HOV lane
 - Congestion issues at specific locations
- Southern I-5
 - High vehicle and person volumes in HOV lane
 - Congestion issues at specific locations
- SR 520
 - Low vehicle volumes (3+), but high transit use, especially in the AM
 - Violation issues in 3+ portion and eastern end

High Vehicle Volumes?

I-5 Southbound, Northgate (NE 137th St)

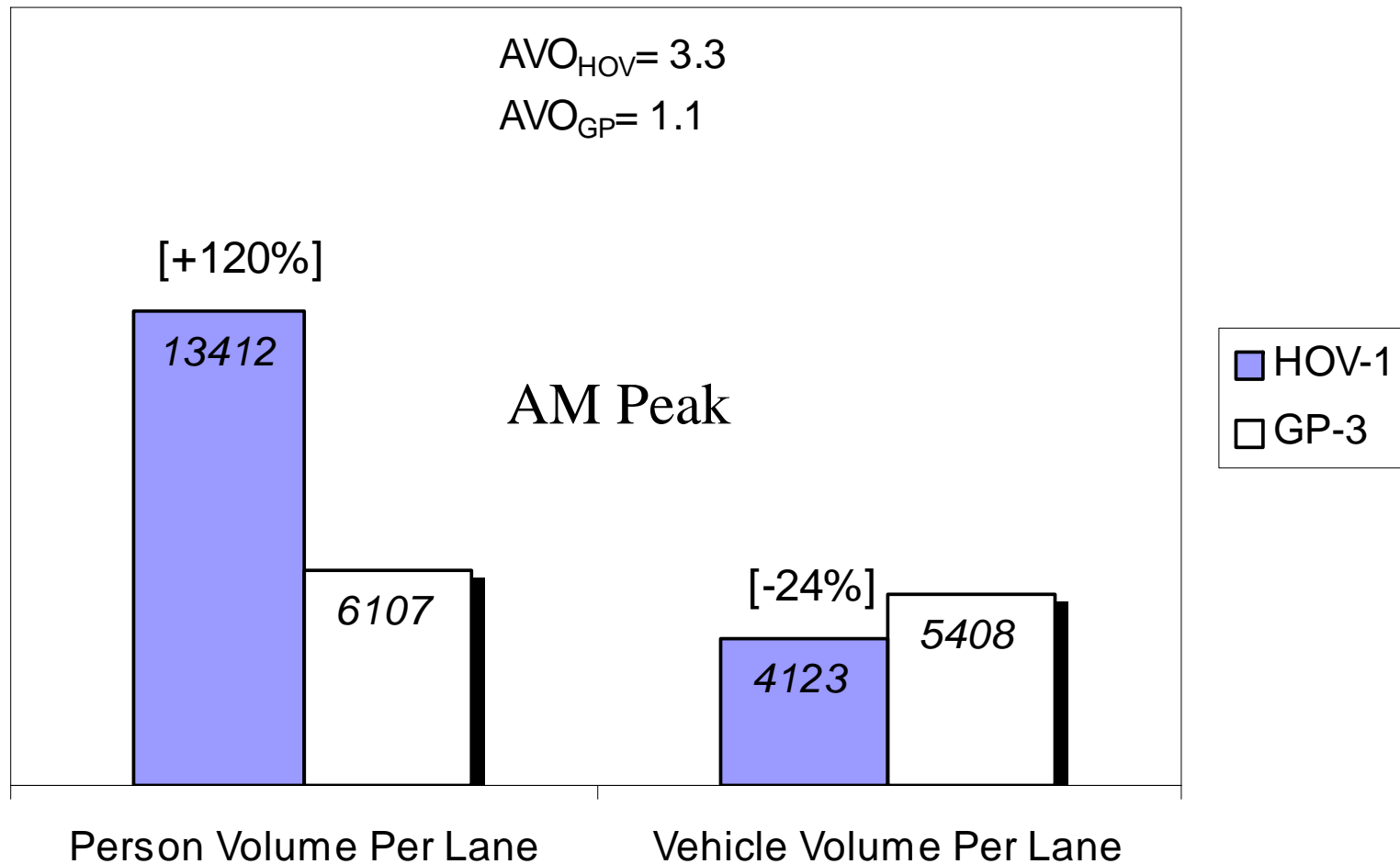


HOV Facility Performance Summary

- Northern I-405
 - High vehicle and high person volumes
- Southern I-405
 - High vehicle and modest person volumes
 - Congestion issues at times
- SR 167
 - Moderate volumes, low transit use
 - Violation issues in southern portion in PM

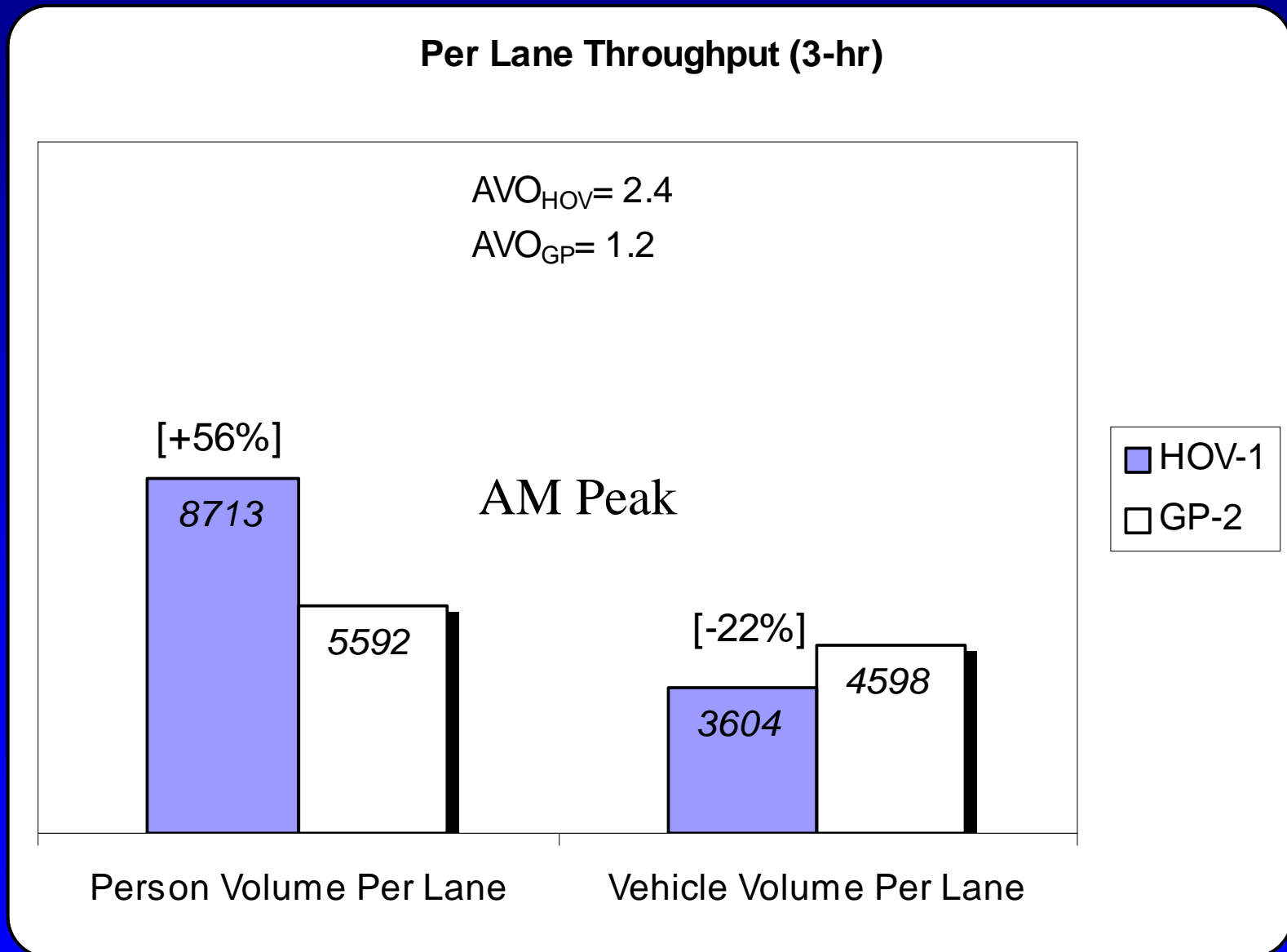
High Vehicle and Person Volume Northern I-5 SB

Per Lane Throughput (3-hr)



High Vehicle – Modest Person Volume

Southern I-405 - NB



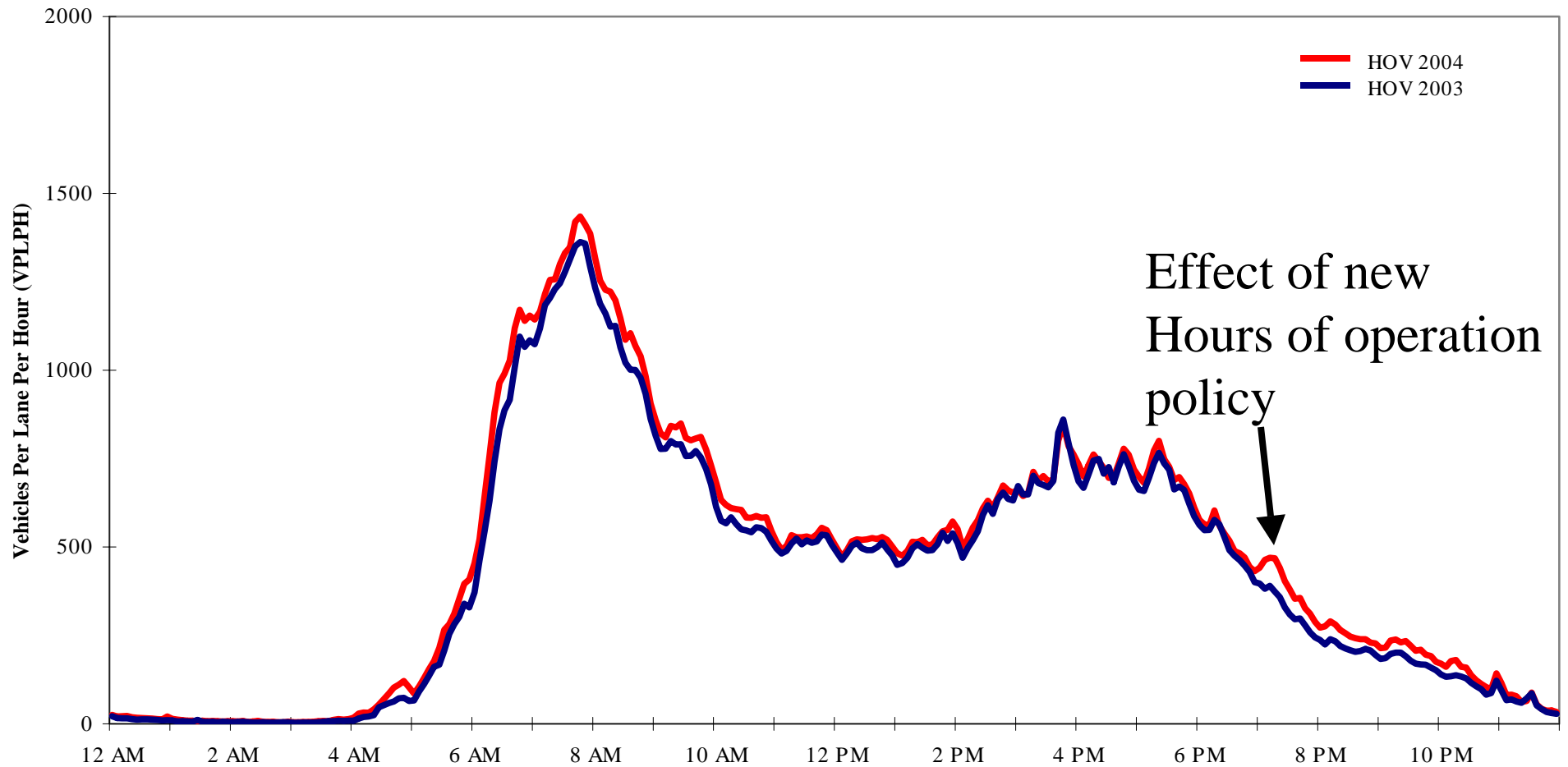
HOV Facility Performance Summary

- I-90
 - Modest vehicle and modest person volumes
 - Express lanes make measuring changes in carpool use and violations hard to do

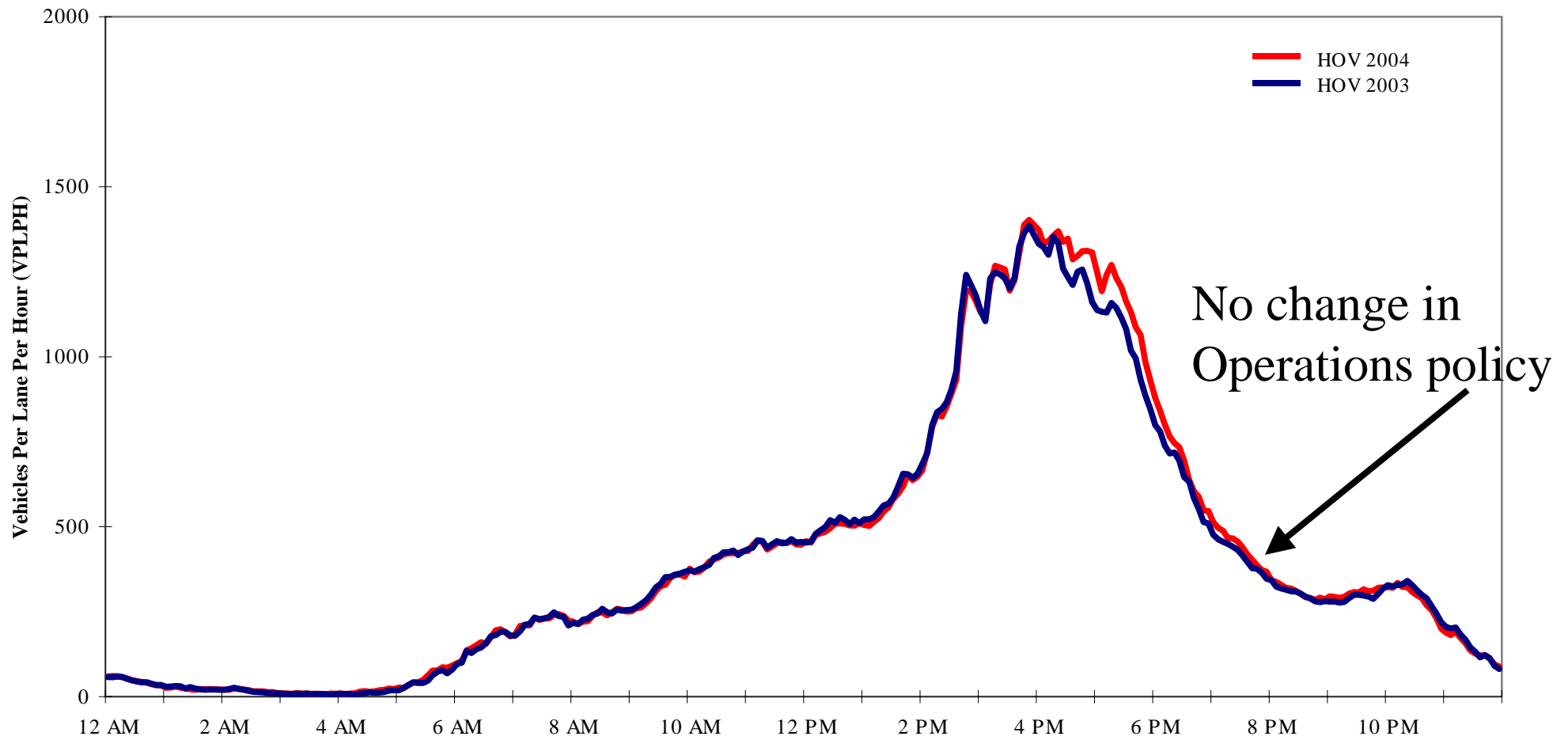
Vehicle Volume Trends

- HOV lane vehicle use is up modestly from 2003 to 2004 throughout most of the system.
 - Volumes are near 2000 levels
- GP volumes are down slightly from 2003
 - Volumes are down even more compared to 2000

HOV Volumes I-405 Southbound, Kirkland (NE 85th St)



HOV Volumes I-5 Southbound, South of Southcenter (S 184th St)



Person Volumes

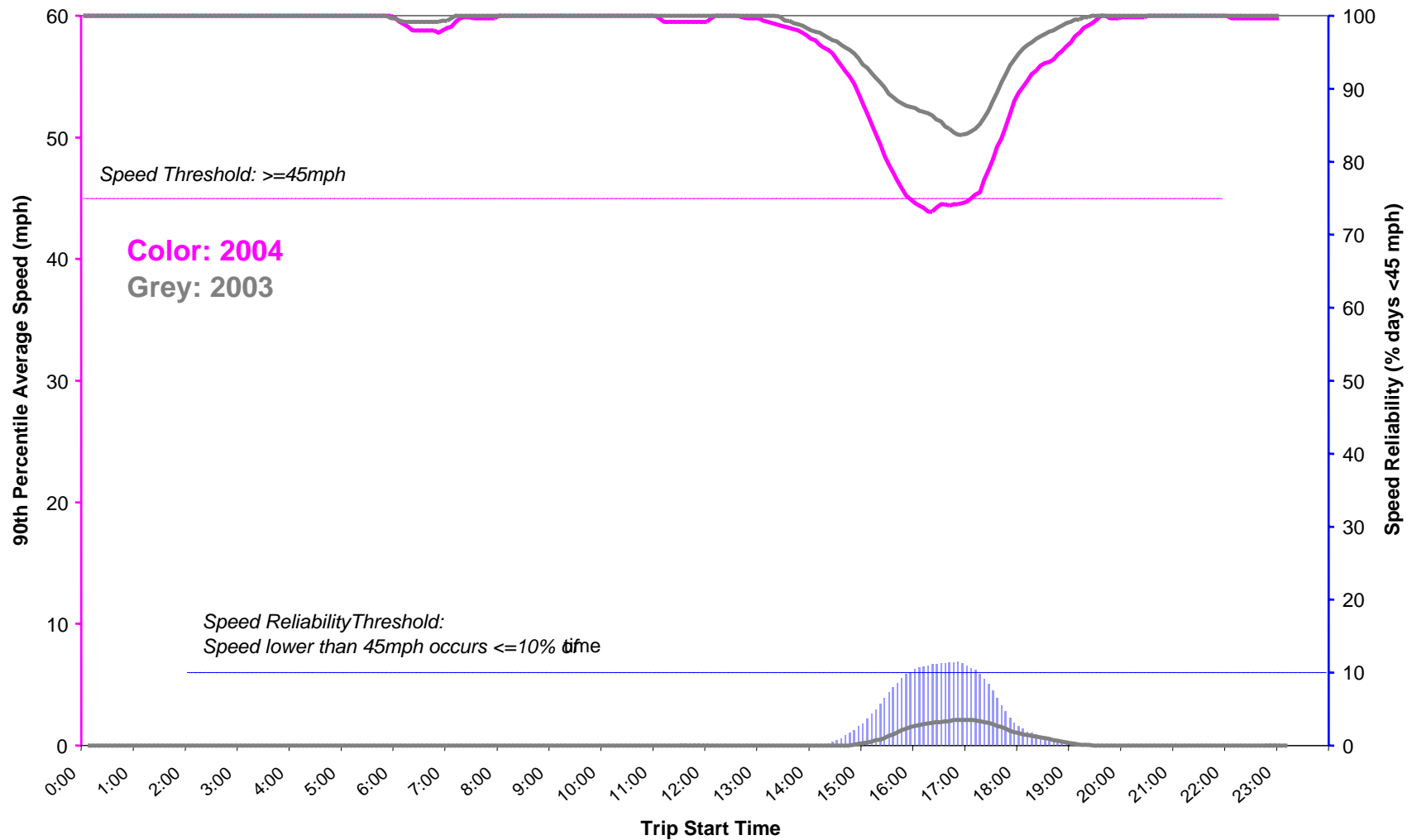
- HOV person volumes are up as well
 - Partly because more carpools are present
 - Partly because transit ridership is up
 - No major change in vehicle occupancy rates in the HOV lane
- Afternoon person throughput is up more than morning person throughput

HOV Lane Speed and Reliability

- Speed in the HOV lane is slightly lower than in previous years
- Several of the routes that had previously met the performance standard are no longer meeting the standard
 - (Many now are just barely failing)

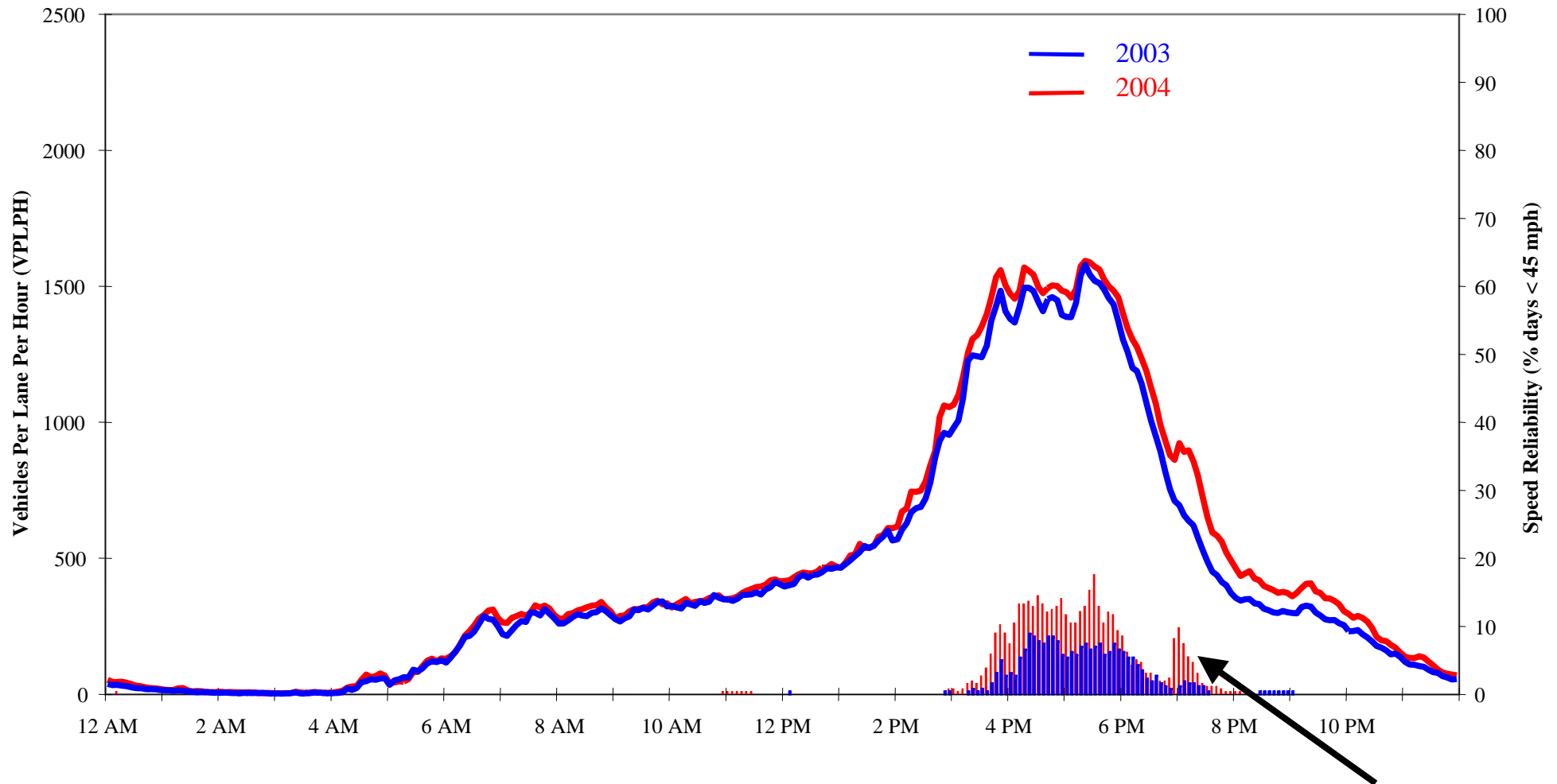
Northern I-405 Northbound

Northbound, I-90 Interchange to SR 524 (18.4 miles)



Estimated Weekday Volume and Congestion (2003 vs. 2004)

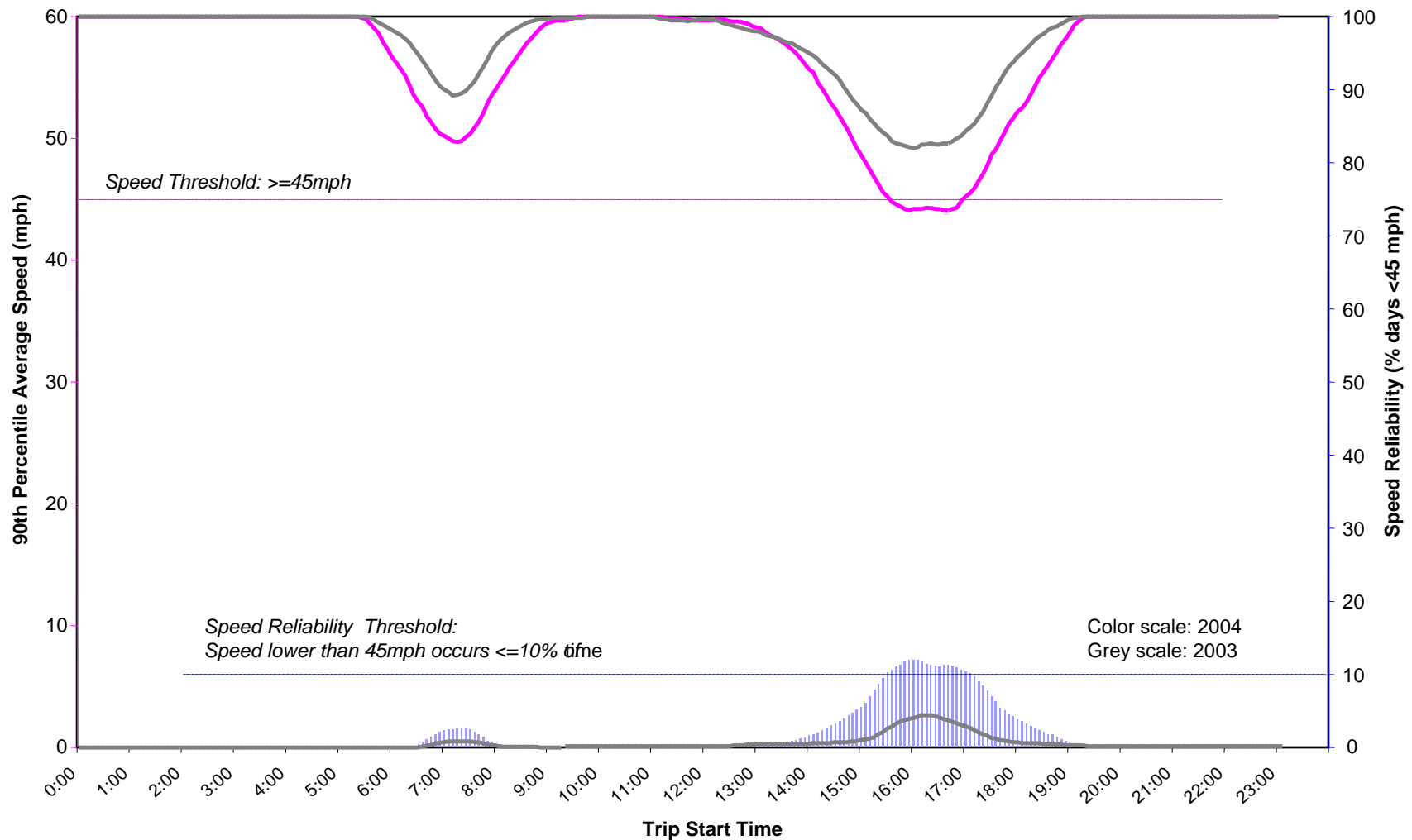
I-405 NE 85th St - HOV NB



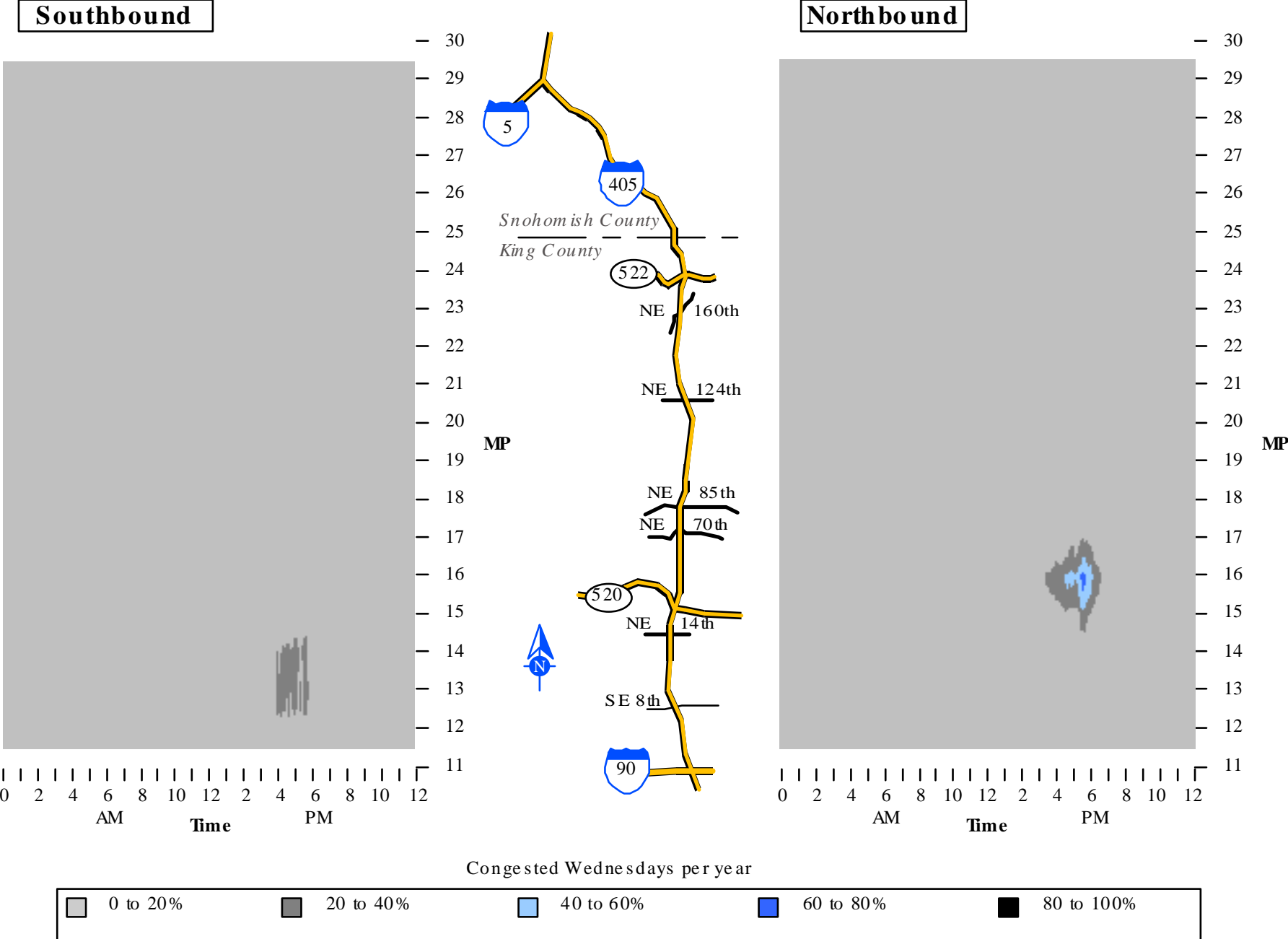
Breakdown that might not have happened prior to change in hours of operation

Northern I-405 Southbound

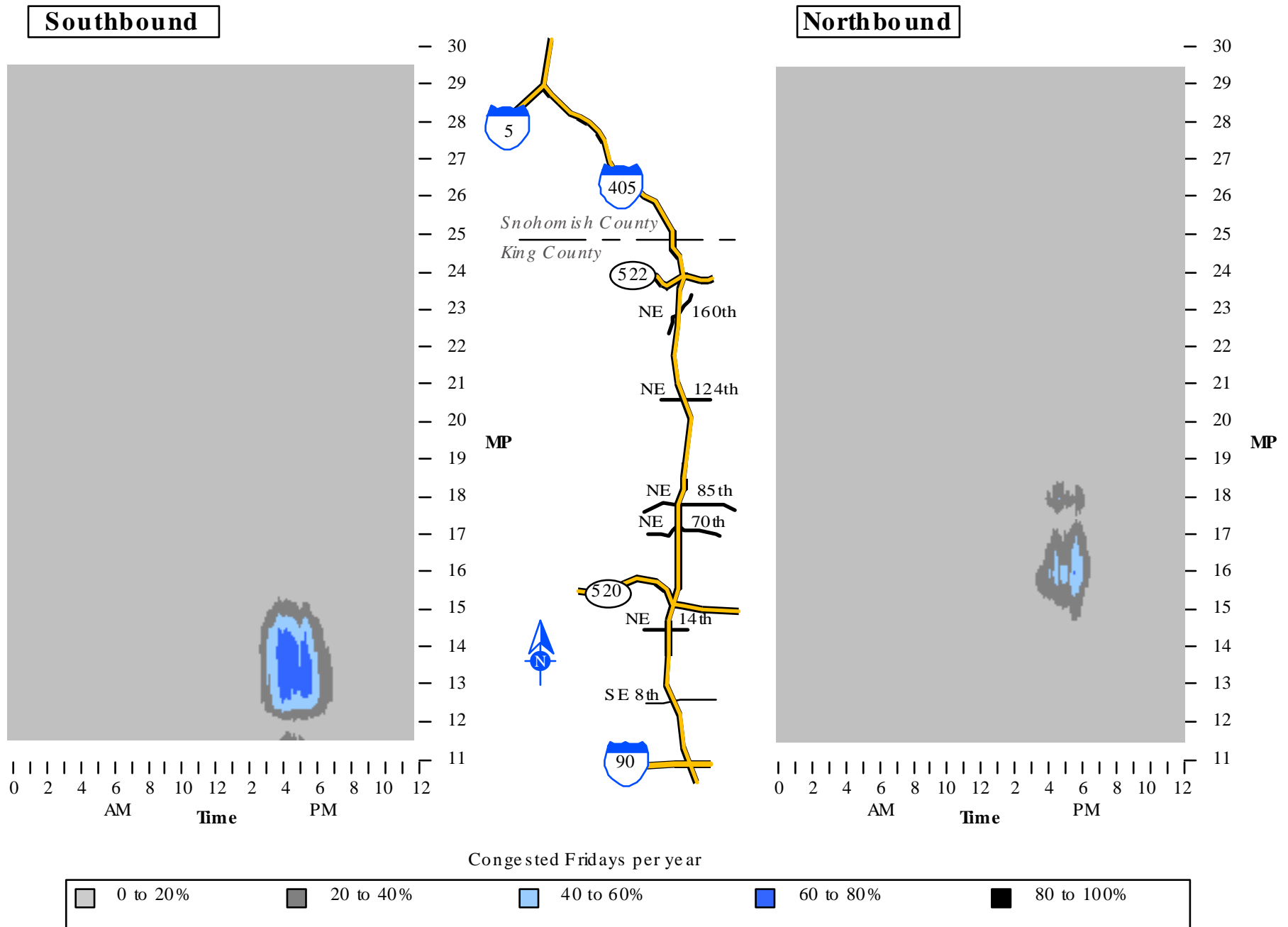
Southbound, SR 524 to I-90 Interchange (18.4 miles)



N. I-405 Congestion Frequency Profile: HOV Lane, 2004 Wednesday

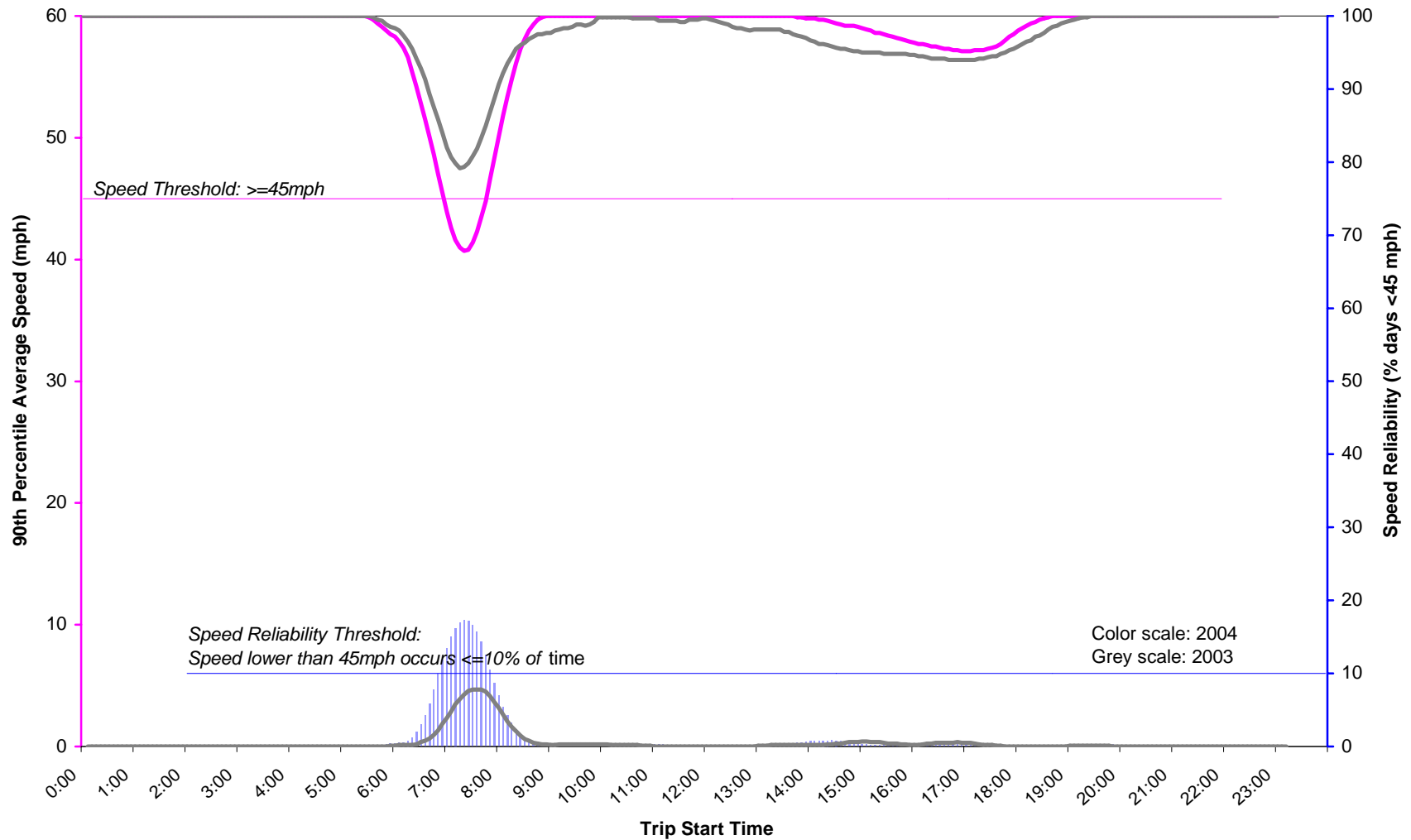


N. I-405 Congestion Frequency Profile: HOV Lane, 2004 Friday



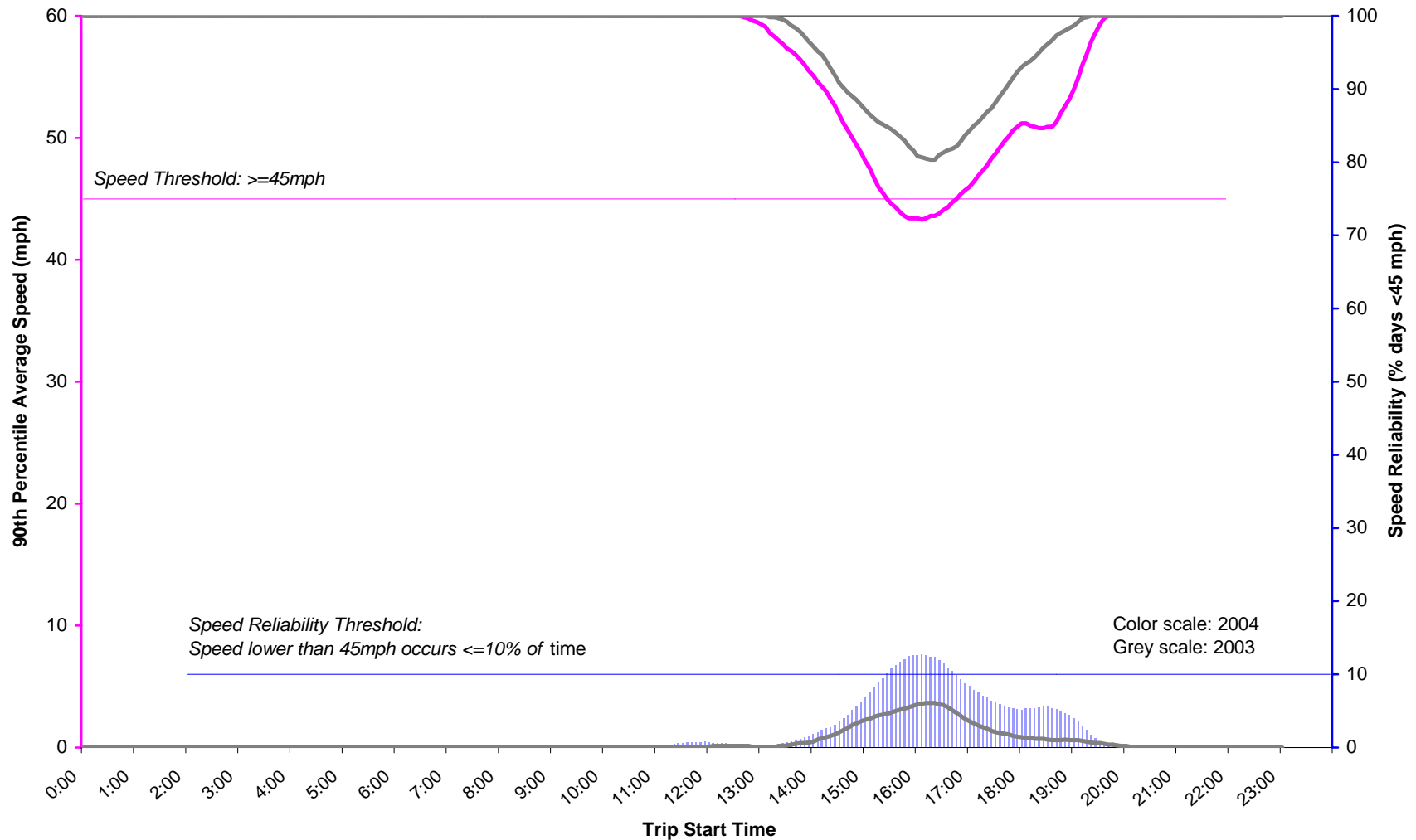
Southern I-405 Northbound

Northbound, Andover Park E to I-90 Interchange (10.5 miles)

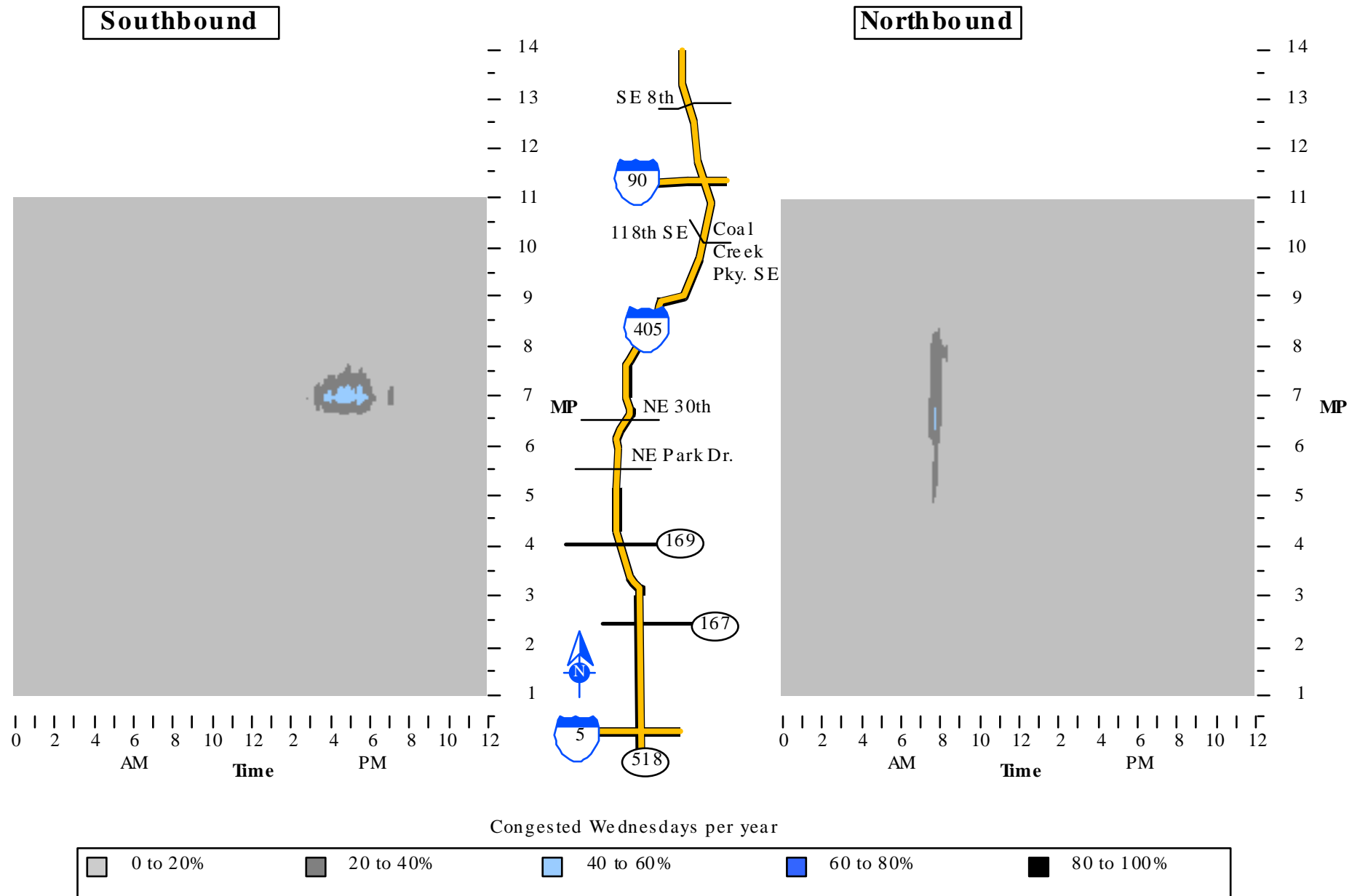


Southern I-405 Southbound

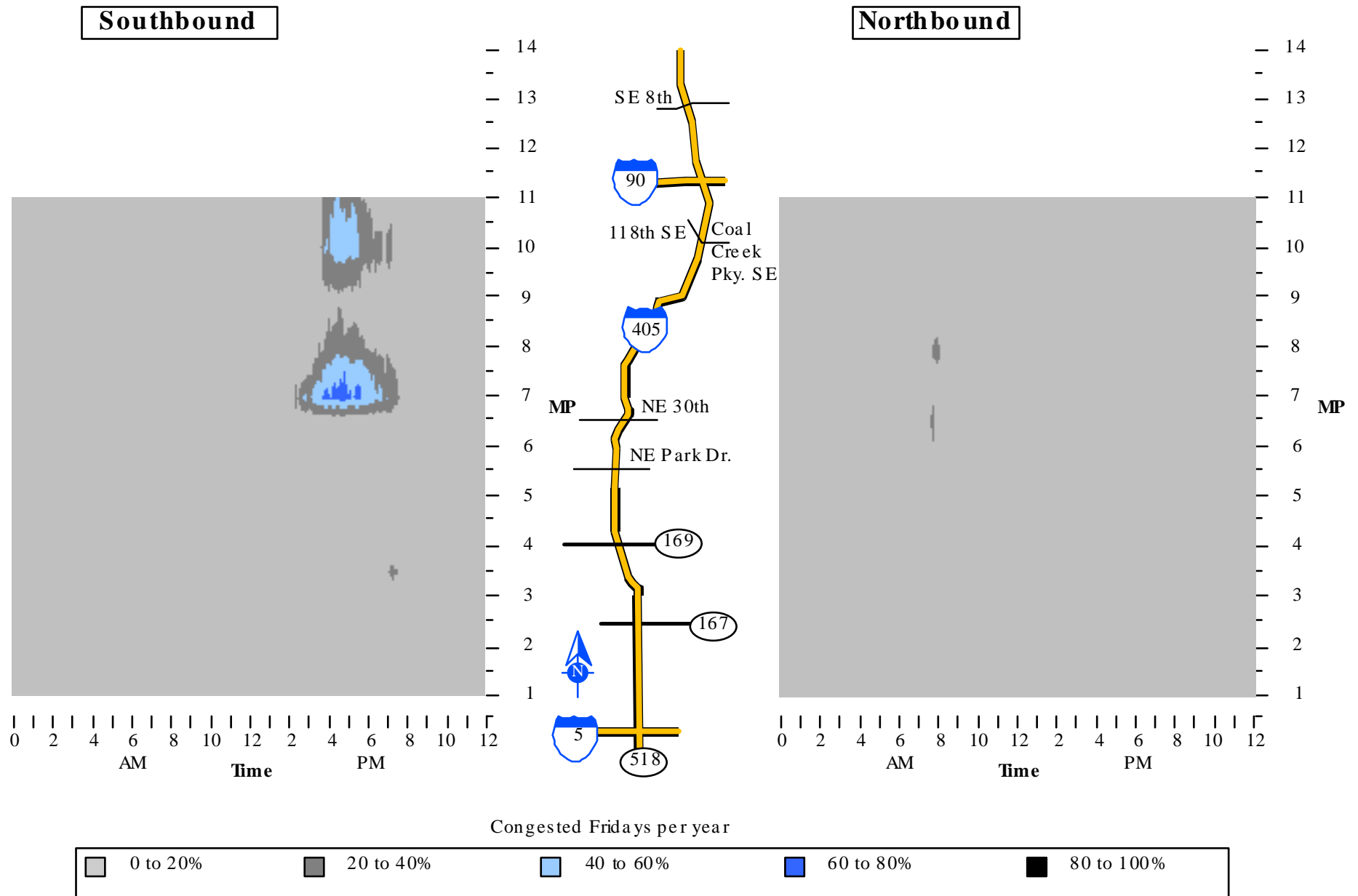
Southbound, I-90 Interchange to Andover Park E (10.5 miles)



S. I-405 Congestion Frequency Profile: HOV Lane, 2004 Wednesday

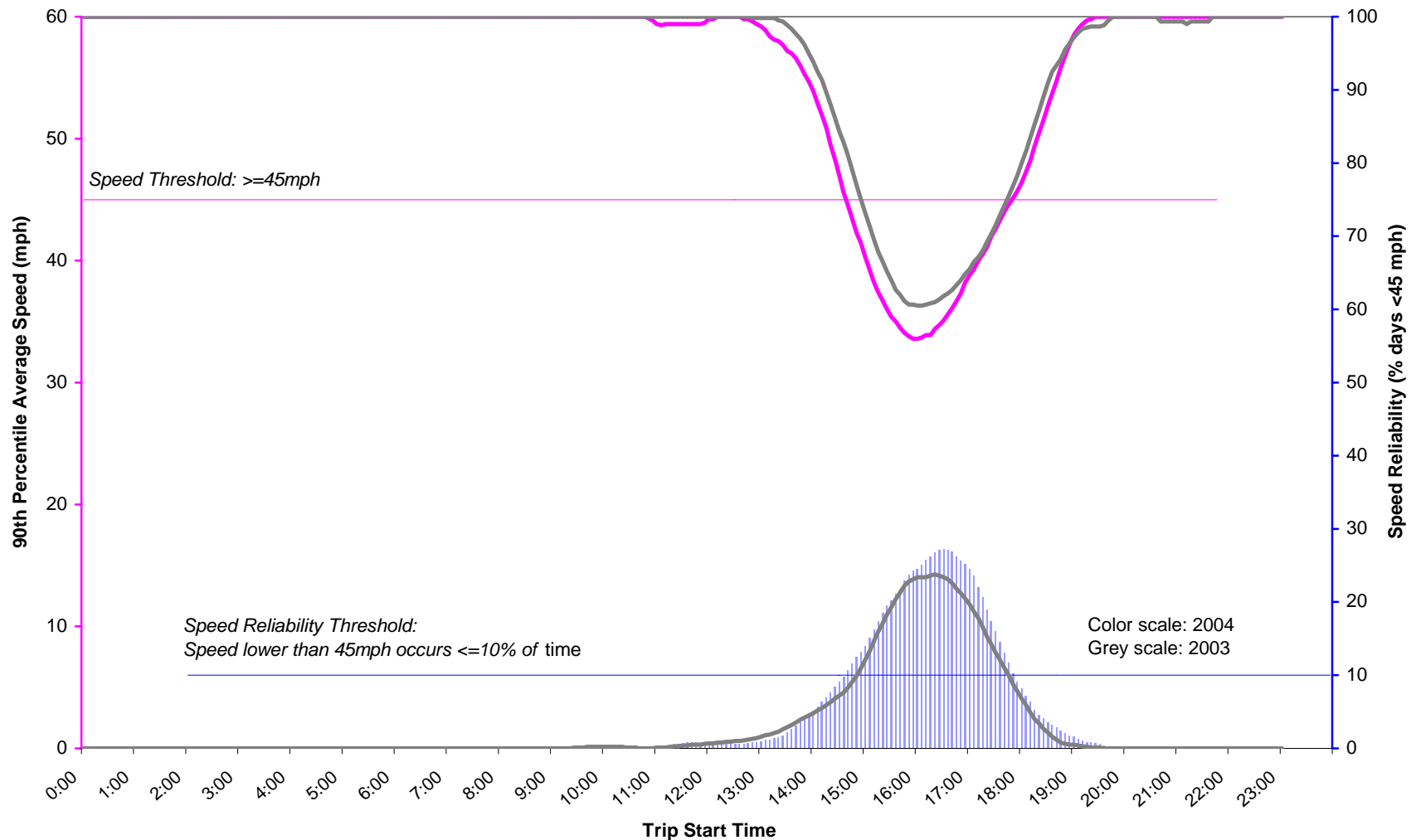


S. I-405 Congestion Frequency Profile: HOV Lane, 2004 Friday



Northern I-5 Northbound

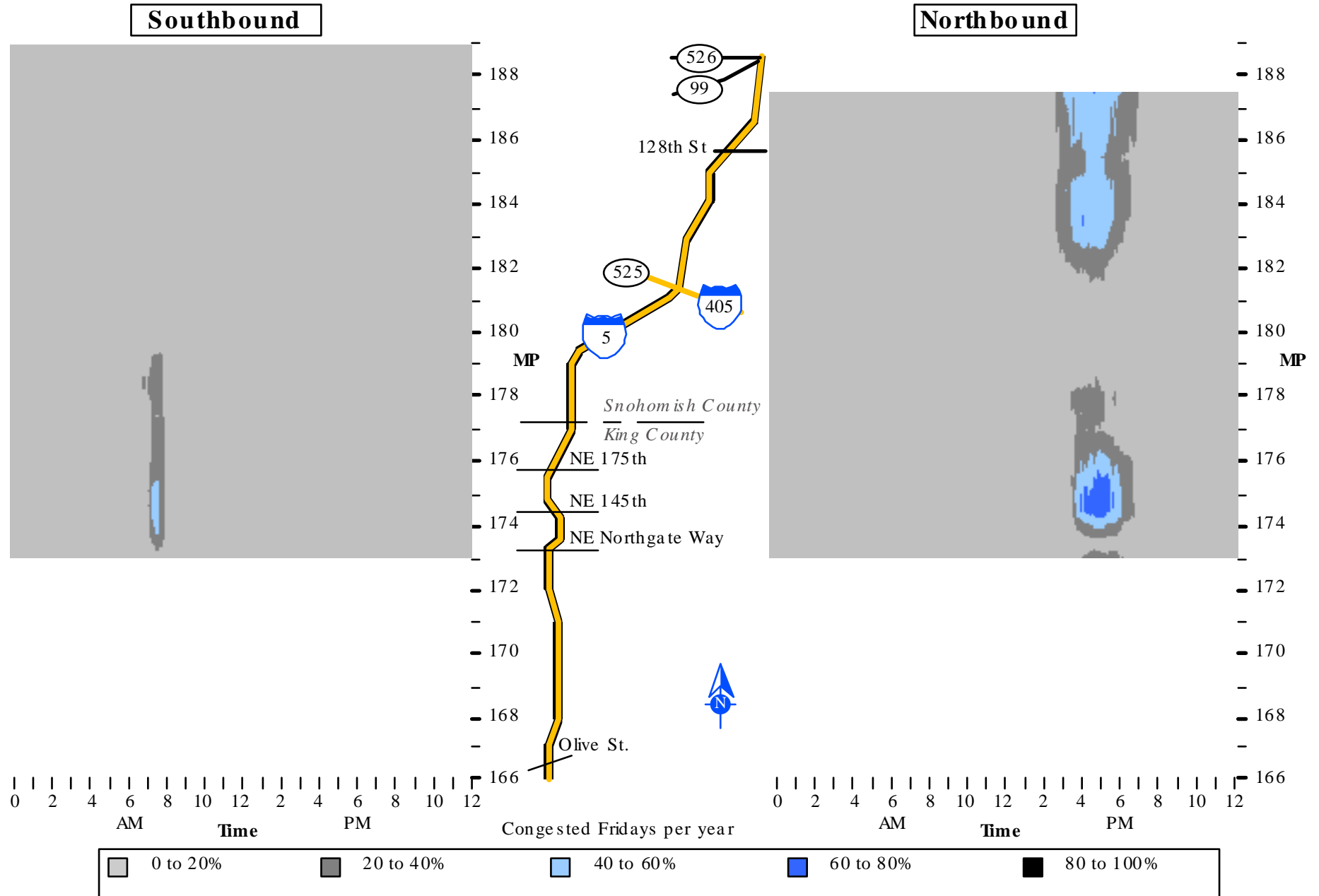
Northbound, Northgate to 112th St SW (15.1 miles)



Southbound

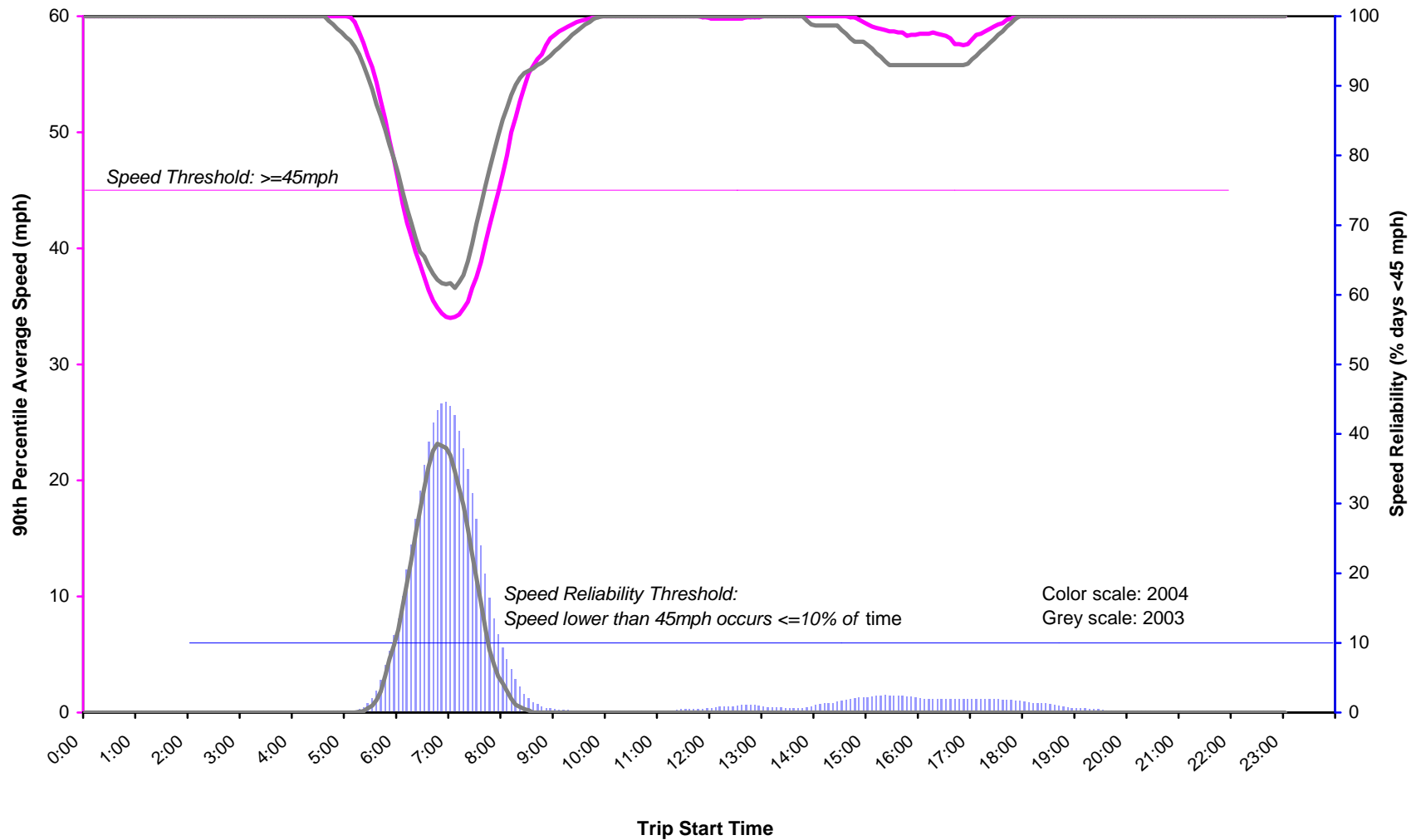


N. I-5 Congestion Frequency Profile: HOV Lane, 2004 Friday



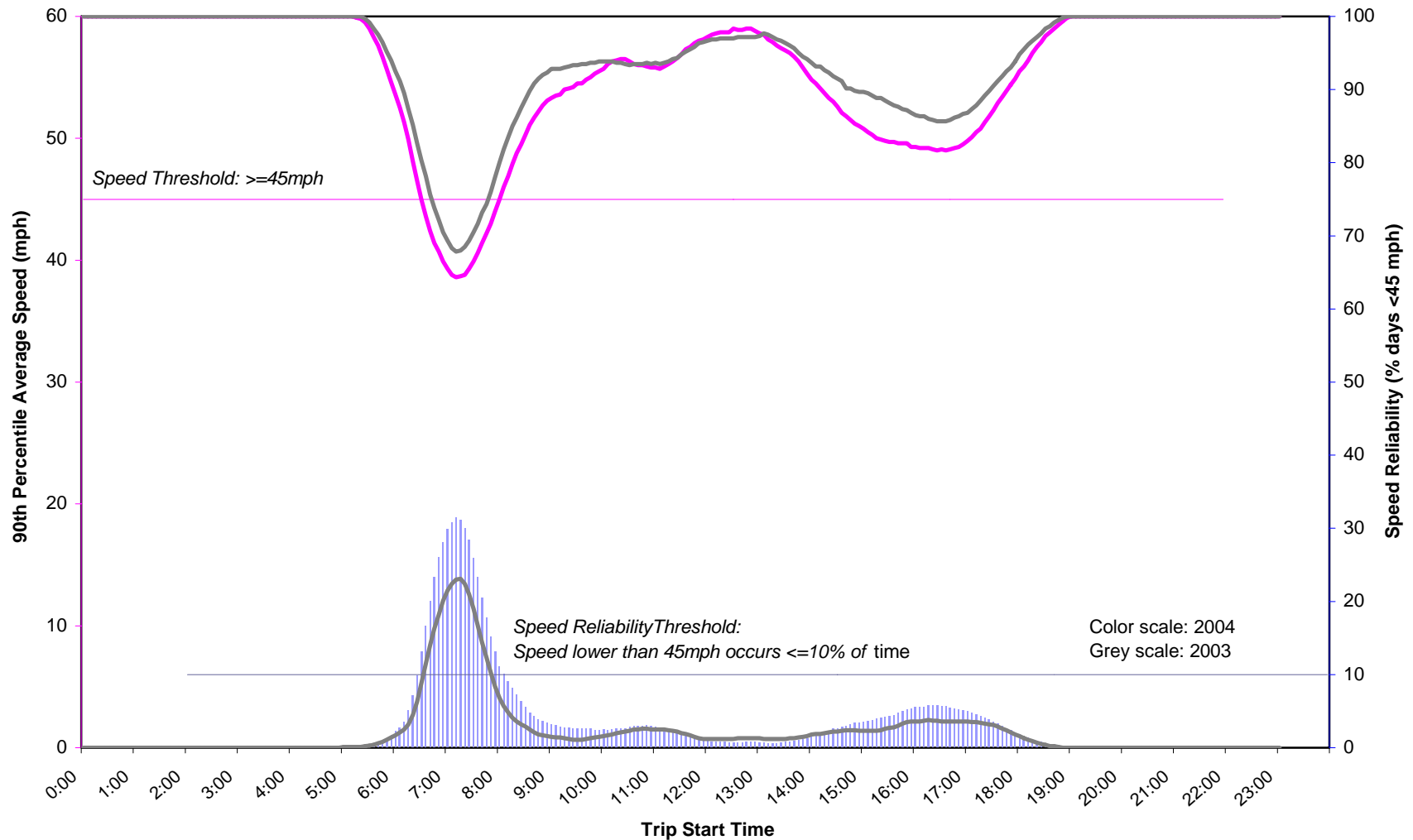
Northern I-5 Southbound

Southbound, SR 526 Interchange to Northgate (16.6 miles)



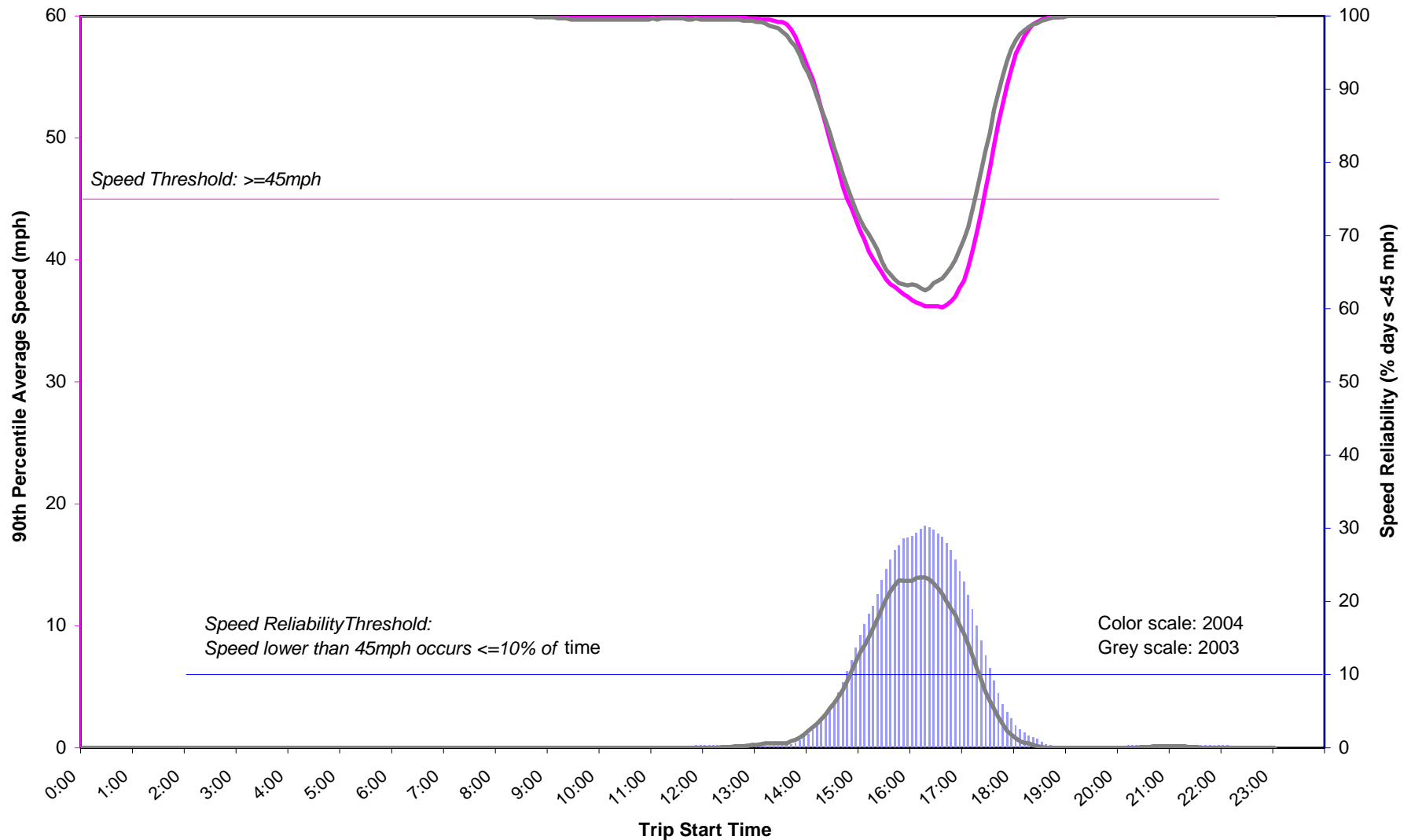
Southern I-5 Northbound

Northbound, SR 516 Interchange to Columbian Way (14.0 miles)



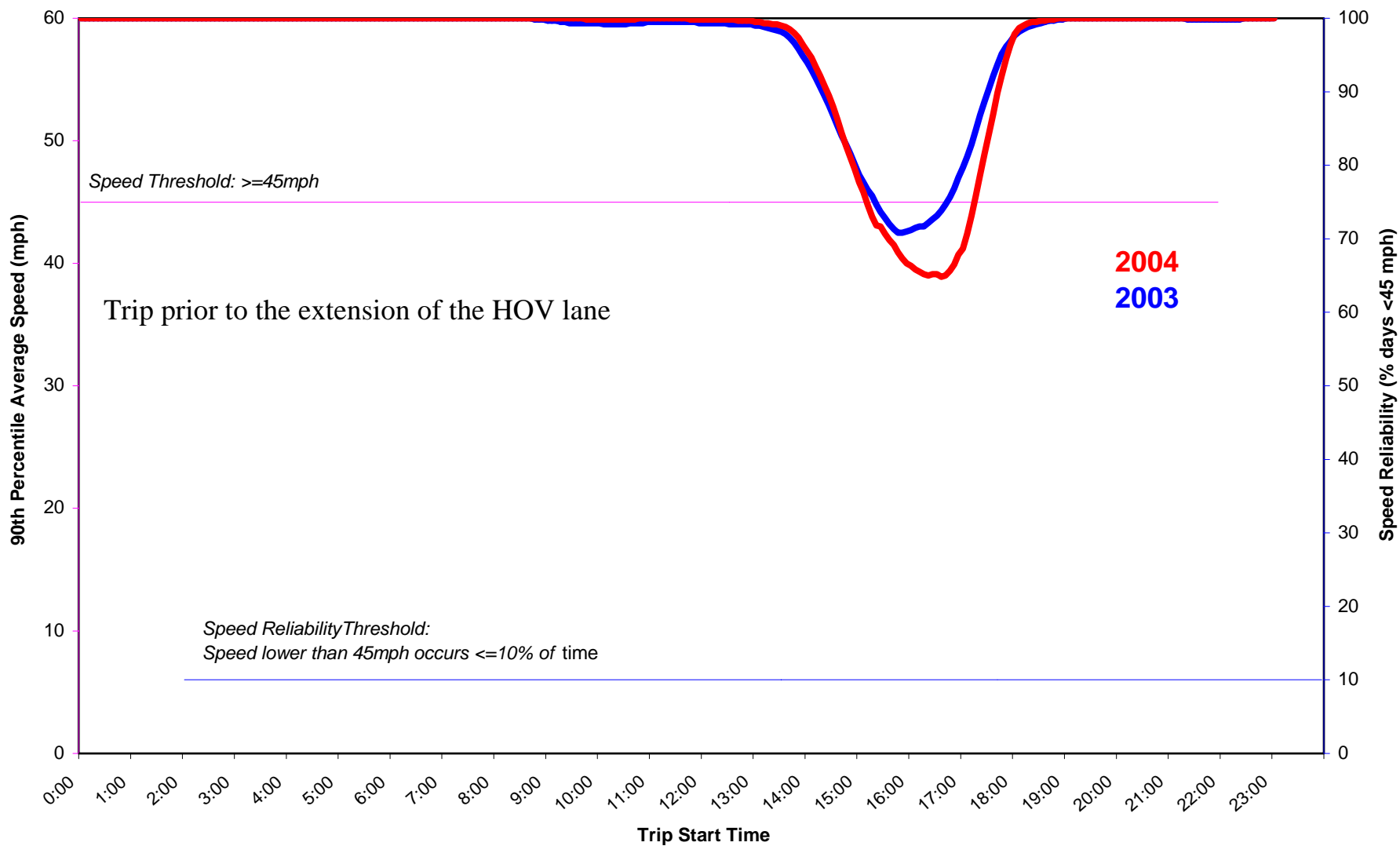
Southern I-5 Southbound

Southbound, S Spokane St to SR 516 Interchange (13.9 miles)

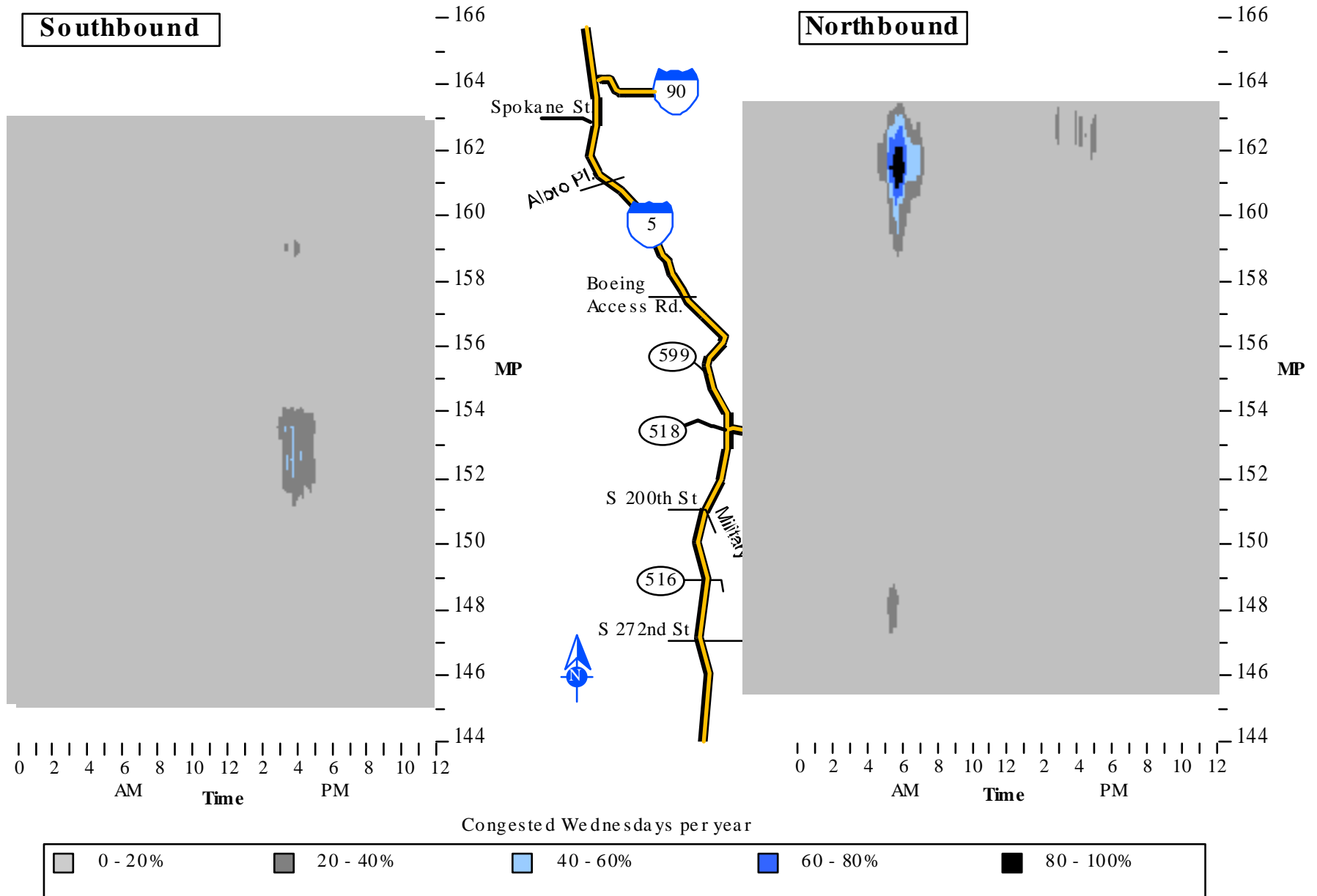


Southern I-5 (old length)

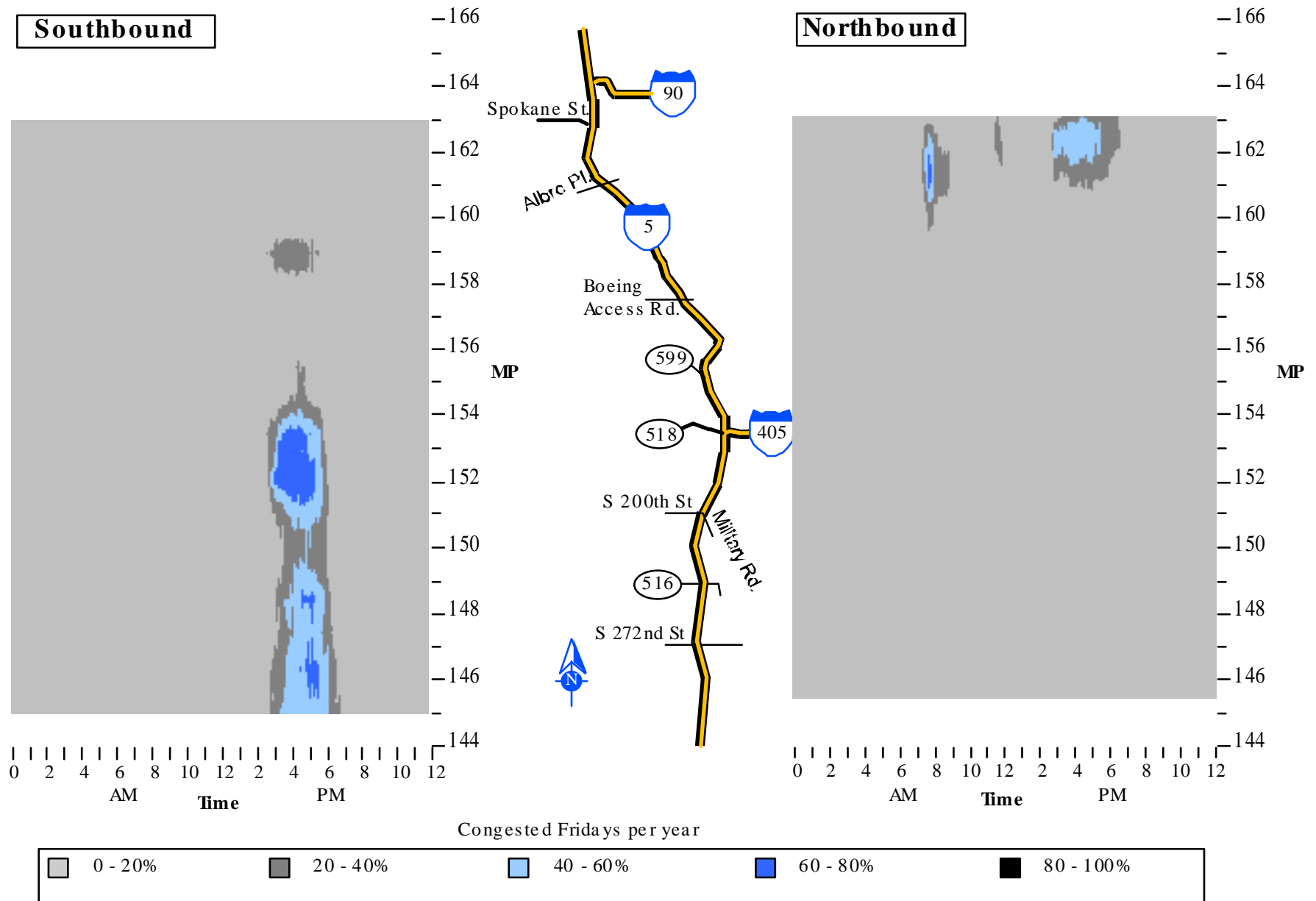
Southbound, S Spokane St to S. 184th S. (10.2 miles)



S. I-5 Congestion Frequency Profile: HOV Lane, 2004 Wednesday

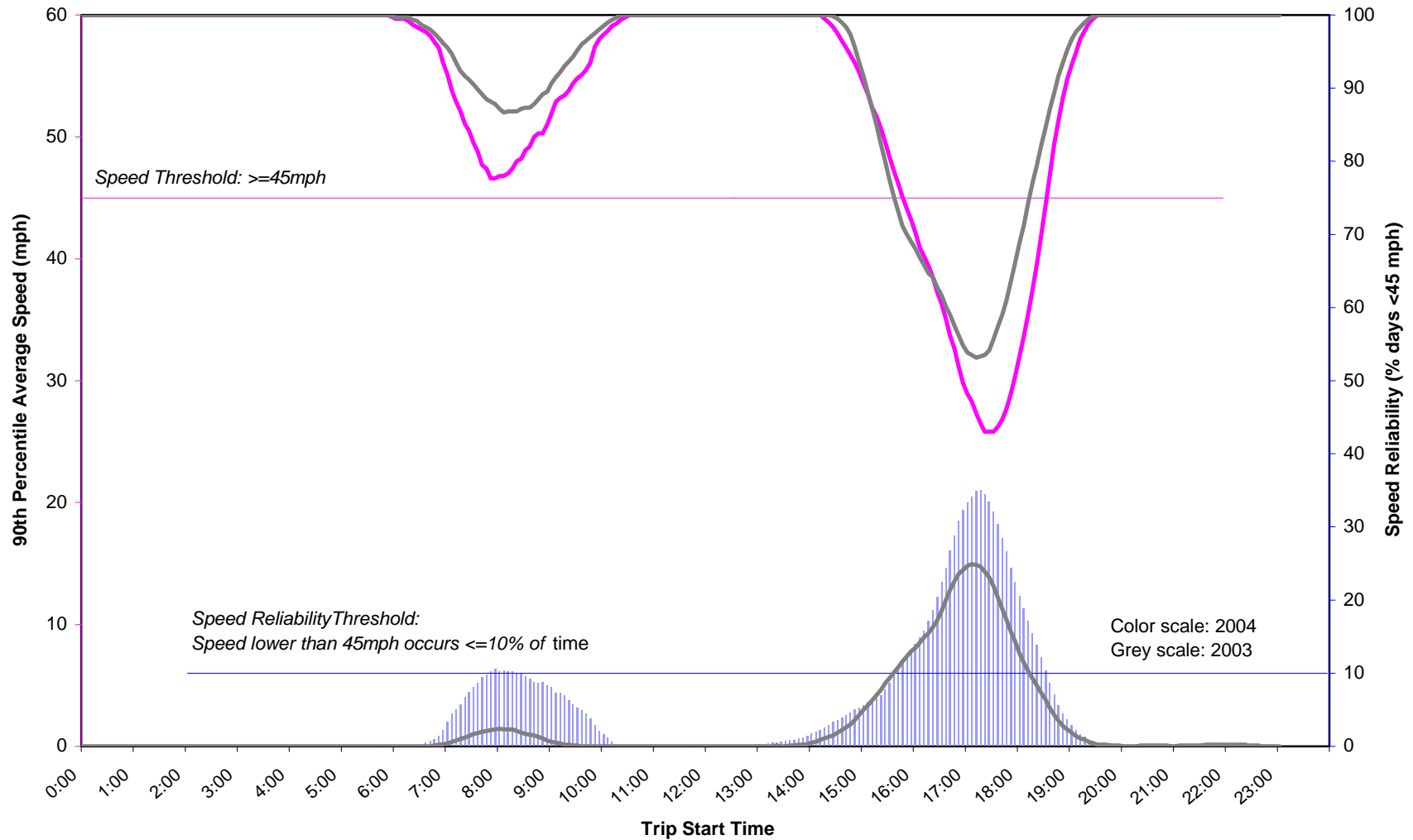


S. I-5 Congestion Frequency Profile: HOV Lane, 2004 Friday



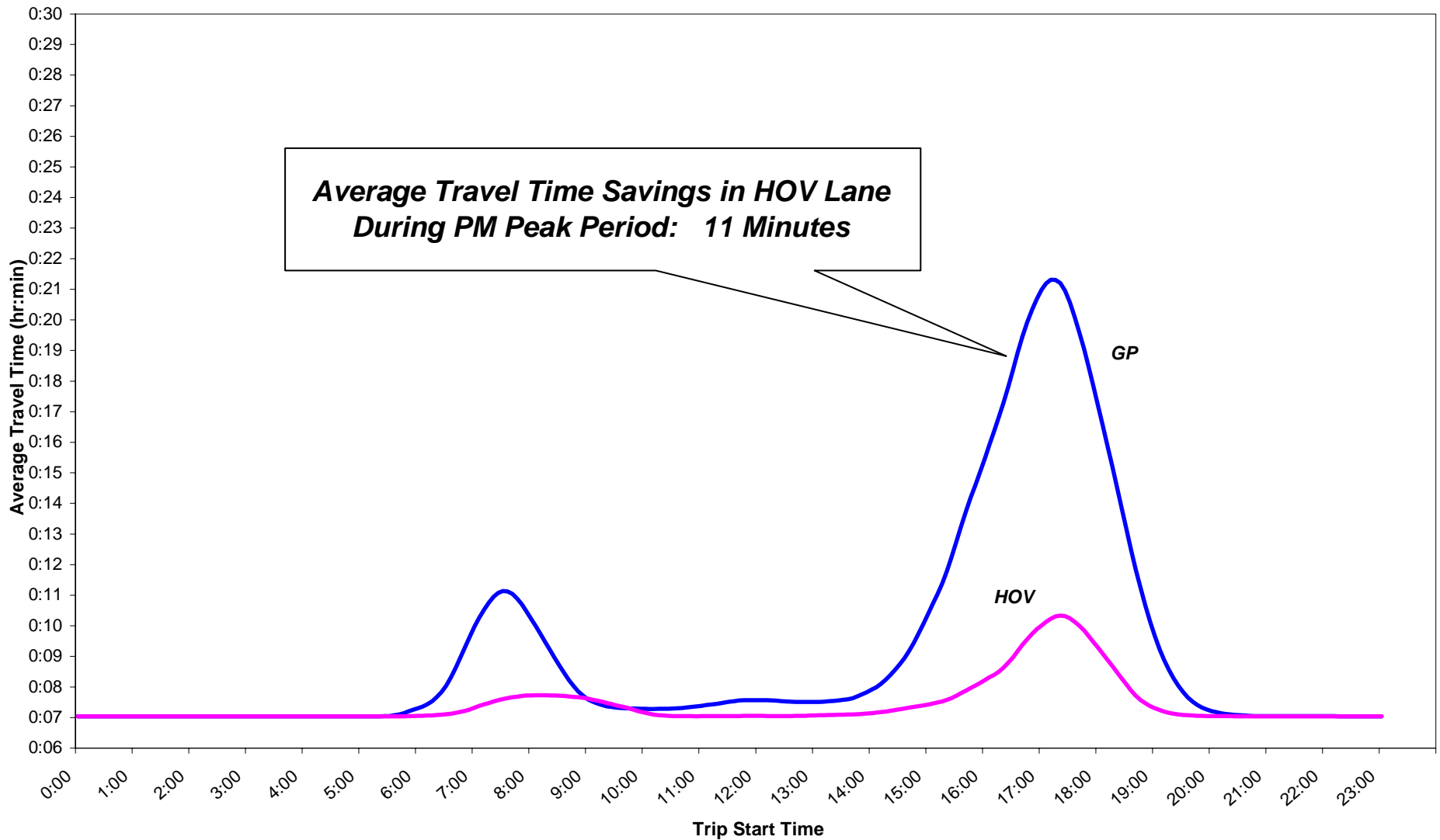
SR 520 WB

Westbound, W Lk Sammamish Pkwy to 84th Ave (7.0 miles)



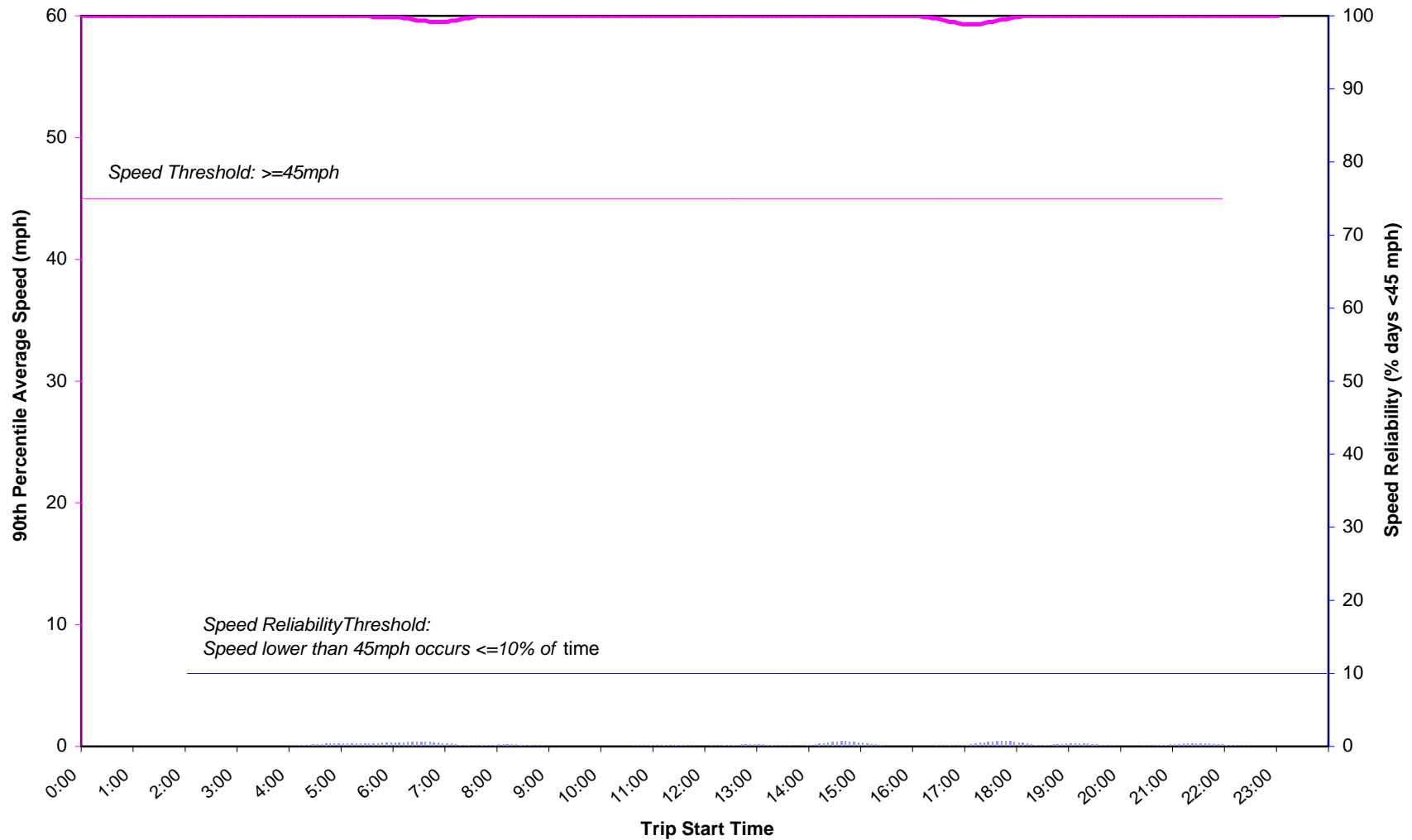
SR 520 WB

Westbound, W Lk Sammamish Pkwy to 84th Ave (7.0 miles)



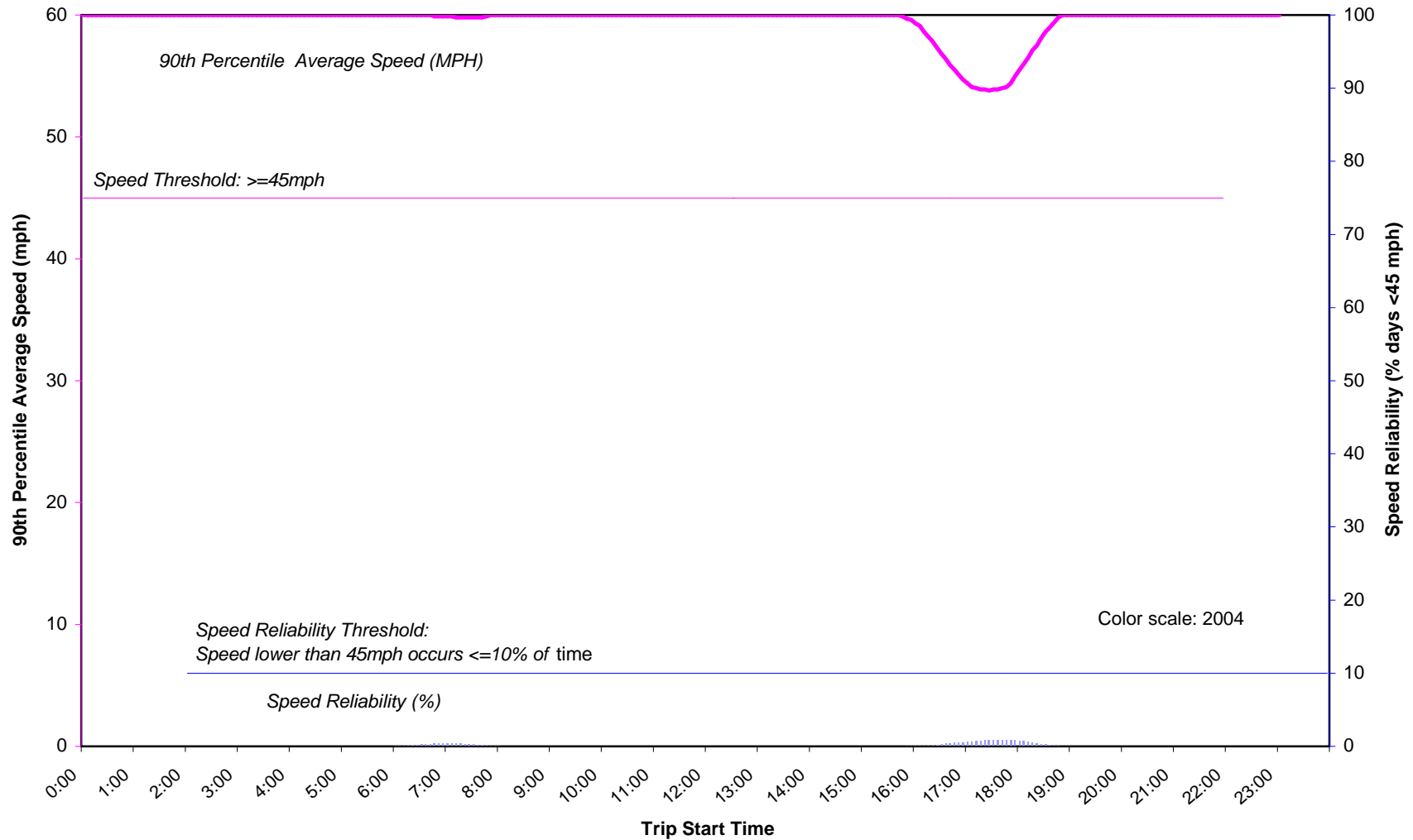
SR 167

Northbound, 15th St NW to S 34th St (9.2 miles)



I-90

Westbound, 200th Ave SE to 23rd Ave S (11.7 miles)



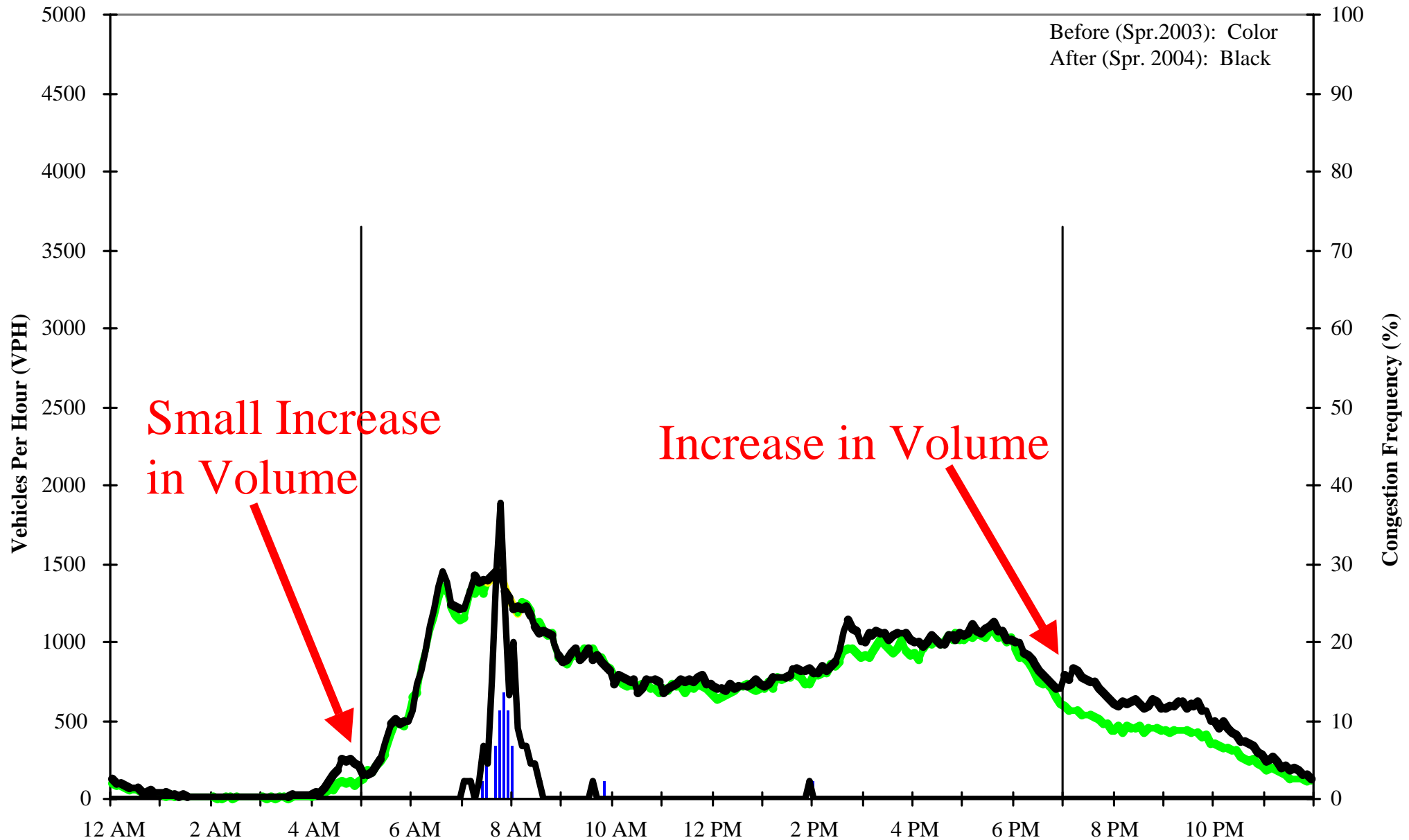
Effect of Changes In HOV Lane Hours of Operation

- Changes in the system are very small
 - Late evening volumes are up
 - Speeds are basically unchanged
 - Violation rates are up marginally
 - Much of the public did not know about the change
 - But public generally thinks good things have happened

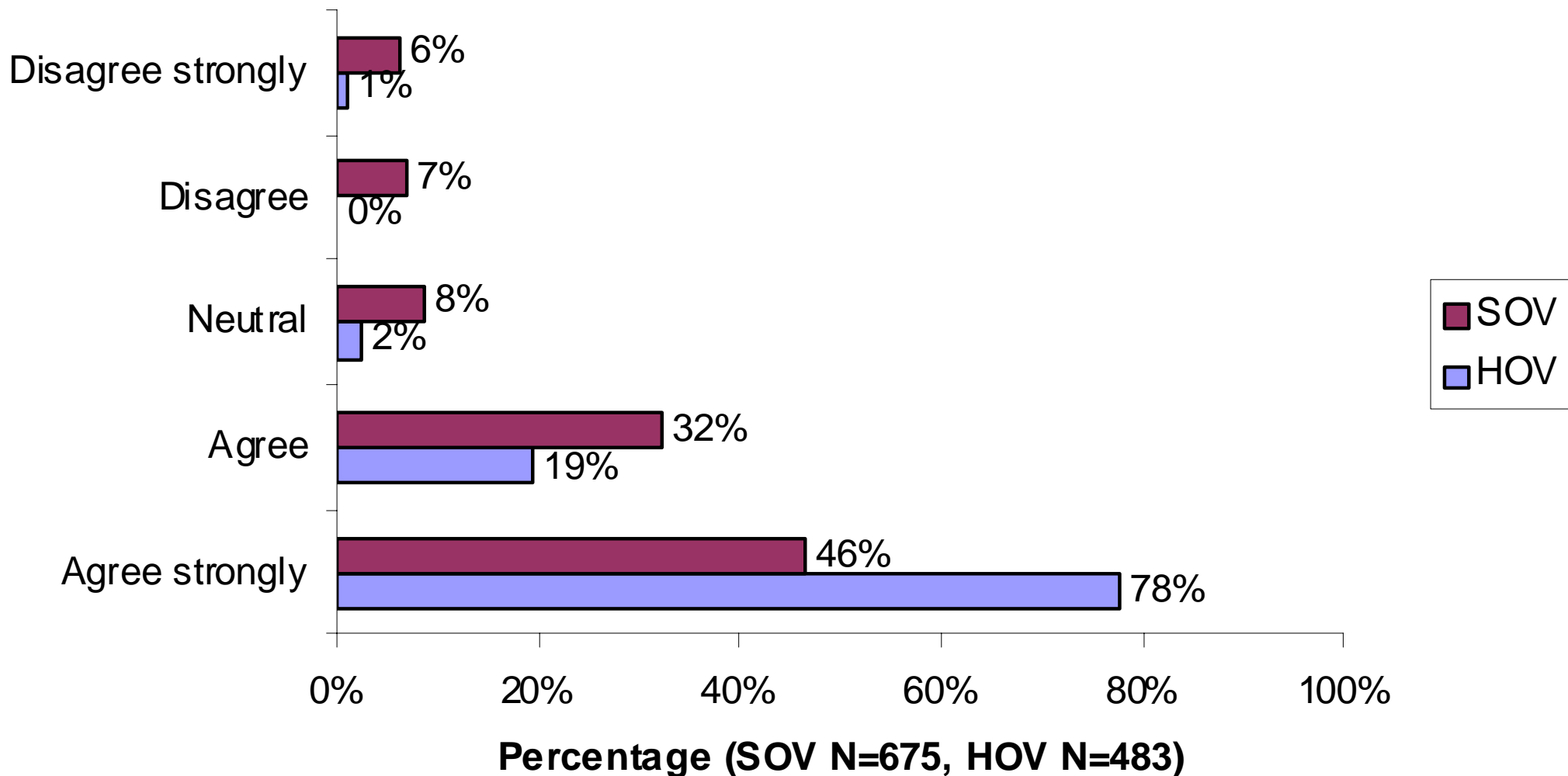
I-405 HOV Volumes Northbound Near Newcastle

Estimated Volume, Speed, and Reliability Conditions (2003-04)

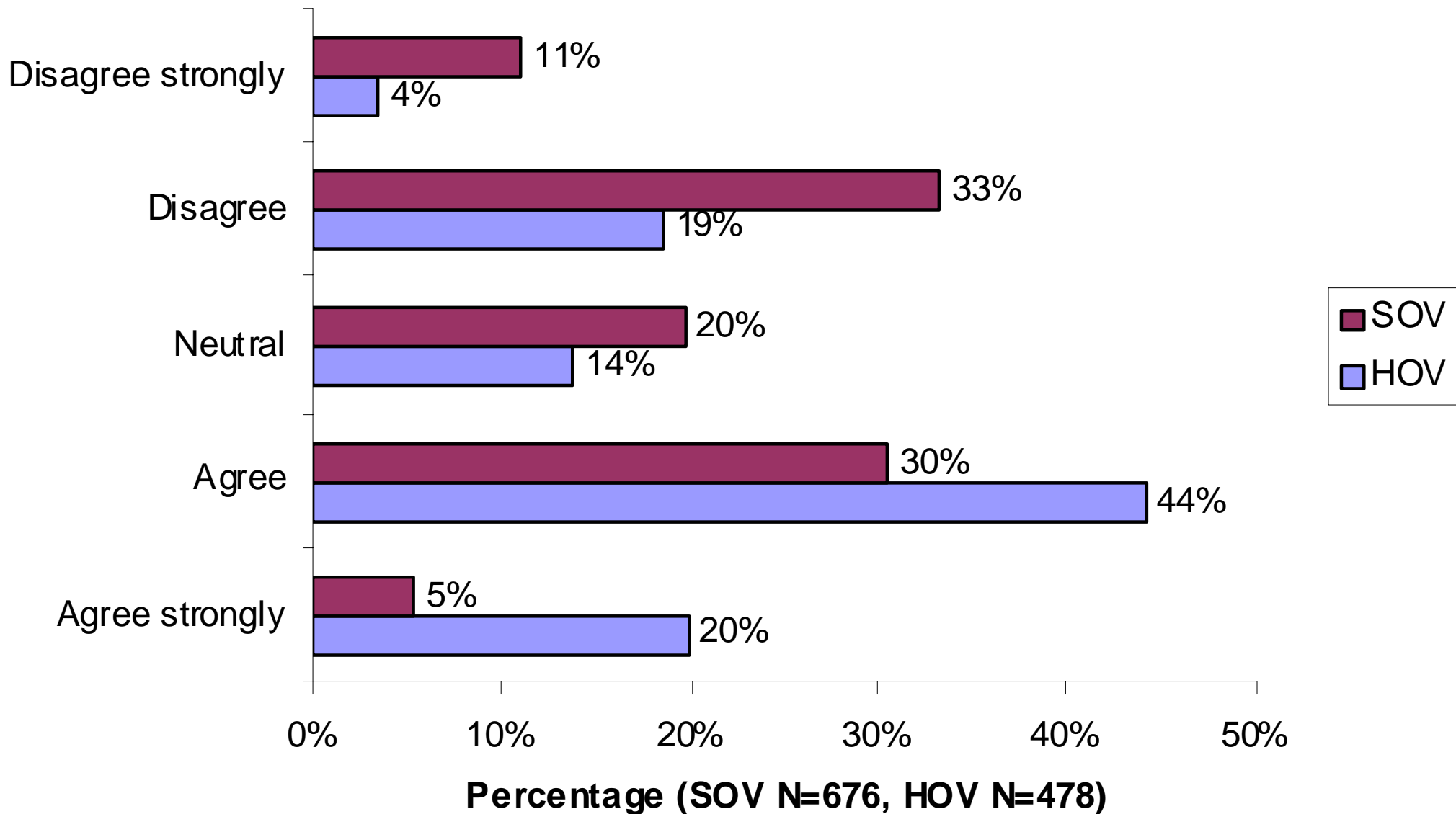
I-405 NE 30th St-NB HOV NB



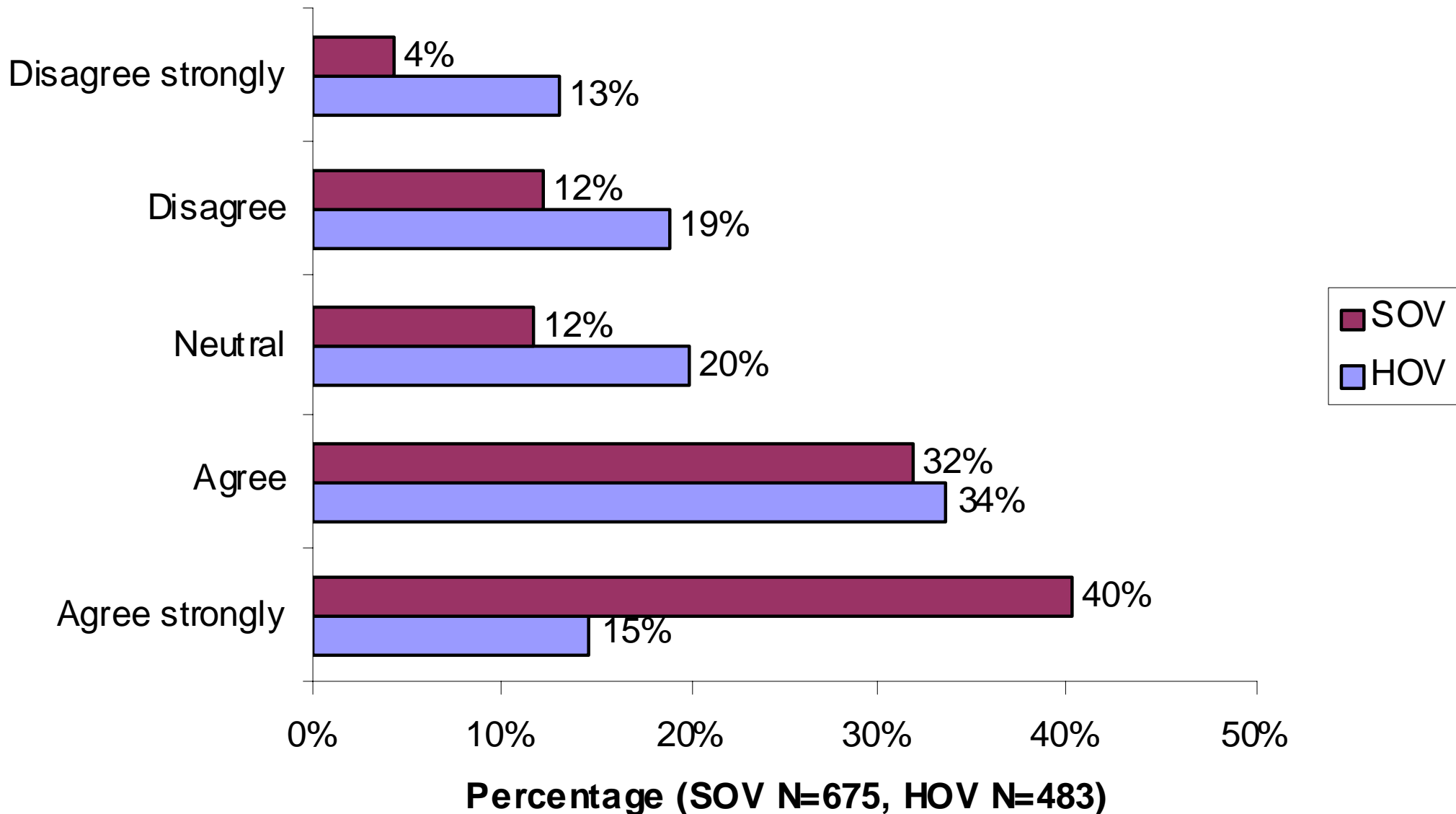
HOV Lanes Are a Good Idea



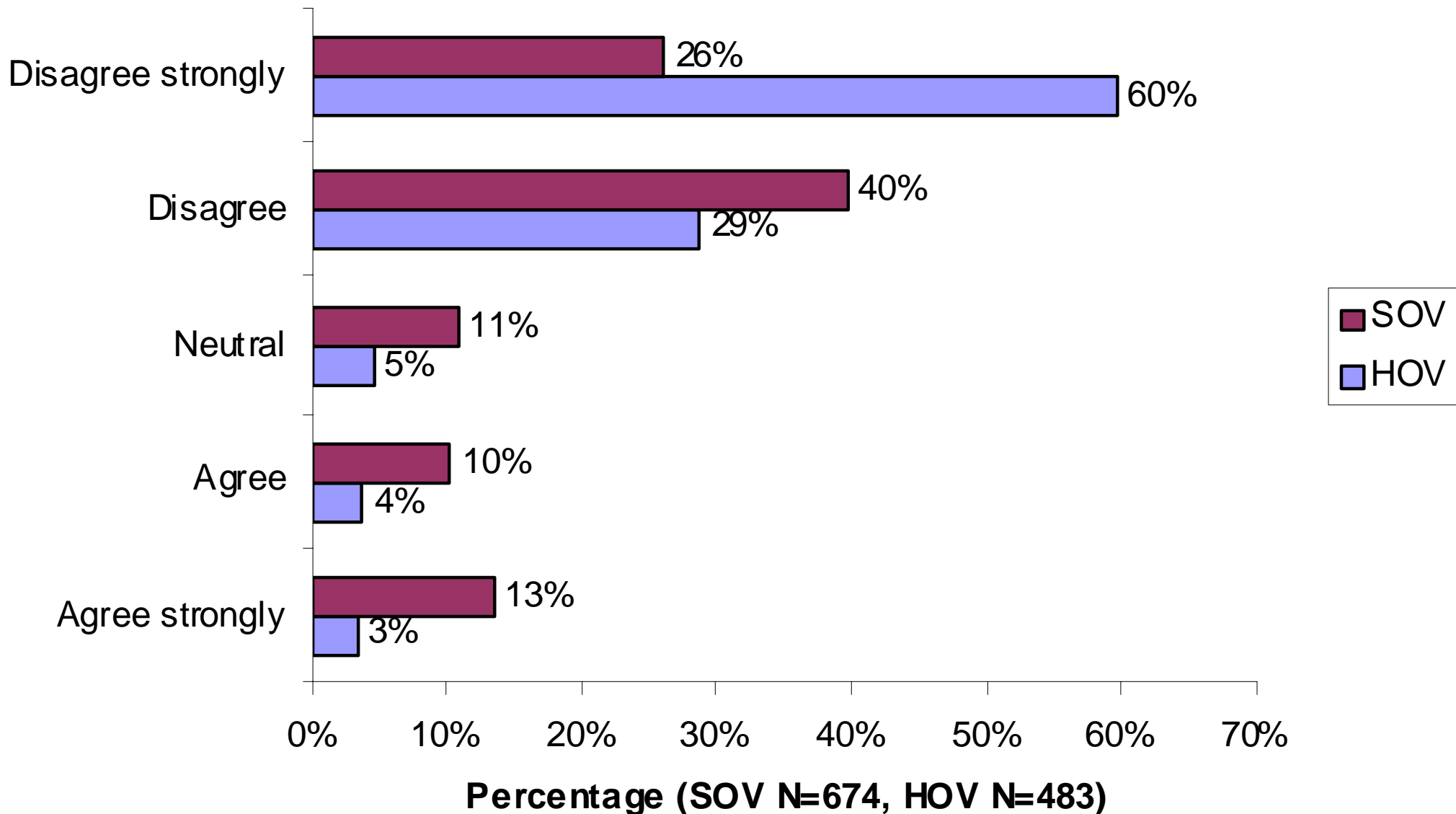
Existing HOV Lanes Are Being Used Adequately



HOV lanes should be opened to all traffic during non-commute hours



HOV lanes should be open to all traffic, all the time



Public Opinion

- Only 36% of respondents knew about the change in operations
- And many respondents were unable to respond to questions about changes in perceived facility performance
- But those that did notice, generally saw positive changes

Puget Sound Freeway and HOV Performance Statistics

<http://depts.washington.edu/hov/>